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Vol. III

No. 2



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All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Assistant Editor, J. S. Hutchinson, Jr., Sierra Club, Merchants' Exchange Building, San Francisco, California.

Correspondence concerning the distribution and sale of the publications of the Club, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Merchants' Exchange Building, San Francisco, California.

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SIERRA CLUB BULLETIN.

VOL. III.

SAN FRANCISCO, MAY, 1900.

NO. 2.

LAKE TAHOE IN WINTER.*

BY JOHN MUIR.

The winter glory of the Sierra! How little is known of it! Californians admire descriptions of the Swiss Alps, reading with breathless interest how ice and snow load their sublime heights, and booming avalanches sweep in glorious array through their crowded forests, while our own icy, snow-laden mountains, with their unrivaled forests, loom unnoticed along our eastern horizon. True, only mountaineers may penetrate their snow-blocked fastnesses to behold them in all their white wild grandeur, but to every healthy man and woman, and even to children, many of the subalpine valleys and lake-basins, six or seven thousand feet above the sea, remain invitingly open and approachable all winter.

With a friend and his two little sons I have just returned from a week of bracing weathering around Lake Tahoe, in which we enjoyed glorious views of winter, fine rolling and sliding in the snow, swimming in the icy lake, and lusty reviving exercise on snow-shoes that kept our pulses dancing right merrily. All the weather was hearty and exhilarating, though varying almost from hour to hour:—

* Reprint of a letter published in the *San Francisco Bulletin* in 1878.

(The highest peak on the right is Matterhorn Peak; the sharp, isolated peak just to the left of it is the false Matterhorn.)
Photograph by J. S. Hutchinson, Jr.

snowing, blowing, clear and cloudy, but never rigorously cold.

This winter has been remarkably mild, the mercury having seldom made a very near approach to zero, even during the coldest nights around the lake, while the average noonday temperature was considerably above the freezing-point. The snow lies deep on the surrounding mountains and about the shores, solid white contrasting with the dark-blue water of the lake, while the forests and cañons and the upper glacial fountain hollows are well filled, assuring abundance of summer water for the lakes and streams.

According to the record kept by Mr. McKinney, on the west shore of the lake, eight miles above Tahoe City, at an elevation of 6,500 feet above sea-level, the amount of snow, measured as it fell, was twenty-two feet and four inches for the season up to March 20th, with four inches of rain, while an inch or two more of rain and two or three feet of snow will probably fall before the full opening of spring. Last season the snowfall, measured by the same observer, at the same station, was only nine feet and seven inches, while the season before last it was no less than forty-seven feet and six inches. The fall about Yosemite Valley, according to my own observations, usually considerably exceeded this. The greater portion of the snow that loads the main summits of the range falls in small crisp flakes and broken crystals; or when accompanied by strong winds at a low temperature, the crystals, instead of being locked together in tufted flakes, are driven against each other and broken into meal and fine dust which darkens the sky like night. But down in the forested region, at about the elevation of Lake Tahoe, the greater portion comes gently to the ground, light and feathery, some of the flakes in mild weather being nearly an inch in diameter, and is evenly distributed and kept from drifting to any great extent by

the shelter of the woods. Every tree is loaded with the fairy bloom, bending down the branches, and hushing the singing of the elastic needles. When the storm is over and the sun shines, the dazzling snow at once begins to settle and shift and fall off the trees in miniature avalanches; then the relieved branches spring up and shake themselves dry, and the whole green forest, fed and refreshed, waves and sings again rejoicing. The snow on the ground settles also, and thaws and freezes until it becomes coarsely granulated ice, with all trace of its crystalline snow structure destroyed. This is the present condition of most of the snow on the range. From towards midnight until midday at this time of year a man may walk firmly over the surface, as if on ice, provided the preceding day has been warm and the night frosty.

The forested region up to an elevation of about eight thousand feet is generally clear of snow towards the end of May or middle of June; but now (March 28th) the higher cañons are still heavily blocked, and the head tributaries of the rivers flow in dark tunnels beneath the icy mass. As warm summer advances, the roof of compacted snow falls in here and there, leaving magnificent arching bridges where it is strongest, over which one may safely ride a horse. All the upper streams are thus buried and bridged every winter, and are seldom completely opened to the light before the end of June or middle of July.

Notwithstanding twenty-two feet of snow has fallen here this season, so greatly has it been melted and compacted, the present average depth at a height of 7,500 feet does not exceed seven feet. The drifts in exposed lake hollows and along the lee sides of bald ridges above the timber-line are often fifty feet or more in depth, and many of the latter are grandly adorned with overcurling cornices, beneath which pale blue light shimmers with ineffable beauty. But it is in the fountain cirques of the ancient glaciers, beneath the

shadows of the highest peaks, that the heaviest and most enduring deposits are stored up. For there the lavish snowfall on the steep converging slopes is shot down in avalanches during or after every storm, heaping snow on snow to a depth of a hundred feet, or even more at times. These treasured banks are never wholly melted, however hot the summer, but with the few lingering glaciers form perennial fountains for the highest tributaries of the rivers.

Few even among Californians have any fair conception of the marvelous abundance of glacier lakes hidden in the fastnesses of our mountains. The snow and some of the glaciers make a telling show, even from the distant lowlands; but not a single stream is visible, nor a hollow where one might hope to find a lake. Nevertheless, wild rivers are falling and sounding in every cañon, and all their upper branches are fairly laden with lakes like orchard-trees with fruit. They nestle in rocky nooks and hollows about all the high peaks and in the larger cañons, reflecting their stern, rugged beauty and giving charming animation to the bleakest and most forbidding landscapes. From the summit of Red Mountain, a day's journey to the east of Yosemite Valley, forty-two may be seen within a radius of eight or ten miles. The whole number in the Sierra can hardly be less than fifteen hundred, exclusive of the smaller gems, which are innumerable. Perhaps two-thirds of them lie on the west flank of the range, and all are restricted to the alpine and subalpine regions, those which once brightened the lower regions having long since vanished by the filling in of their basins. Lake Tahoe is king of them all, not only in size, but in the surpassing beauty of its shores and waters. It seems a kind of heaven to which the dead lakes of the lowlands had come with their best beauty spiritualized. It lies embosomed in mountains of moderate height near the northern extremity of the high portion of the

range, between the main axis and a spur that puts out on the east side from near the head of the Carson River. Though it is twenty-one miles long by ten wide, and from about five hundred to sixteen hundred feet deep, its basin was once occupied by a glacier which filled it from the bottom to a point high above the present water-level, and being lavishly fed by the snows of the encompassing mountains, crawled slowly, like a mighty river, over the north rim of the basin, crushing and grinding the lower mountains that lay in its way, and it was only at the end of the ice period that this noble lake, at least in anything like its present form, came into existence.

Excepting the forests that have sprung up around its shores, the post-glacial changes that have taken place are scarcely appreciable. The sediments carried forward by the inflowing streams at the head of the lake have made a few square miles of meadow-land, and the breaking through of a moraine dam in the cañon of the outlet has lowered the lake considerably, leaving shore benches and lines on the rocky promontories to mark the original level. With these comparatively unimportant exceptions, the lake itself and all its grandly sculptured, ice-scored, and moraine-streaked basin exist to-day in just about the condition they presented when first they came to the light towards the close of the Glacial Period.

The destructive action of man in clearing away the forests has not as yet effected any very marked change in general views. Perhaps about 150,000,000 feet of lumber for the Comstock mines has thus far been cut from the lake shores. But the business is being pushed so fervently from year to year, almost the entire basin must be stripped ere long of one of its most attractive features. One of the lumber companies at work here has contracted with mine-owners to supply 36,000,000 feet of lumber and 60,000 cords of wood this season. It is estimated that the Tahoe

basin still contains about 600,000,000 feet of lumber available for the mines.

In summer the woods resound with the outlandish noise of loggers and choppers and screaming mills; skiffs and steamboats skim the lovely blue water in work and play; and ever and anon as you thread the groves along shore you come upon groups of gay tourists sauntering about, gathering flowers, or resting luxuriously in the rosinny shade of the pines, some in easy picnic attire, others all ribbons and colors, glaring wildly amid the green leaves and frightening the wondering squirrels and birds. But winter brings rest. At sight of the first snowflake pleasure-seekers flee as from a plague, the ax leaves the woods, and the kind snow heals every scar. Contemplating the basin from any commanding hilltop, only pale curls of smoke seen at wide intervals betoken the existence of human dwellings. Like the bears, the few settlers that remain here are silently "holed up." The snow covers their cabins as if they were boulders, and when approached only a narrow shoveled-out passage, or tunnel, is found leading to the door. Some of the more enterprising winter dwellers drift about in boats in calm weather, catching trout for the Carson market,—for the lake, on account of its great depth, never freezes. They thus earn from thirty to forty dollars a month, and at the same time get rid of lonely dullness. A trapper may also be seen now and then shuffling along the shore on long Norwegian snow-shoes in pursuit of minks, fishers, and otters.

In this letter I intended only to say a good word for winter in the mountains, hoping to incite others to come and enjoy it, sketching our excursion to illustrate the ease and comfort with which such snowy winter rambles may be made; but I have written too much I fear about the snow to leave room for more than a thin outline. We went by rail to

Carson, and from there set out by stage for Glenbrook. After ascending on wheels until we reached the snow-line, the driver attached his four horses to a sled, hoping thus to cross the summit, which is less than eight thousand feet high, without much difficulty. But mild weather had softened the snow, and the unfortunate animals, after floundering and wallowing through a mile of it, lay down exhausted with their heels in the air. Then we made our way on foot over to the lake. Next day, on a small steam-tug, we crossed the lake to McKinney's, on the west shore, where we were at home. Here we spent a few health-giving, delightful days, rowing, bathing, racing at lightning speed on snow-shoes down a mountain-side back of the house, and slipping about through the solemn, silent woods. Only the eldest of my companions ventured with me on the steep slopes. This was his first experience on snow-shoes, and the several descents he made were the most remarkable specimens of falling locomotion that I ever had the fortune to witness. In shooting down steep declivities the long sled-runner-like shoes have to be kept parallel with firmly braced limbs. My friend, however, heedless of advice, launched himself in wild abandon, bouncing and diving, his limbs and shoes in chaotic entanglement, now in the snow, now in the air, whirling over and over in giddy rolls and somersaults that would shame the most extravagant performances of a circus acrobat. How original and inimitable he was! Wonderfully refreshing and exhilarating his queer capers must have been; for on coming to rest, with his runaway members divorced and lost, he would quietly gather himself, pick out the snow from his neck and ears, and say with preternatural solemnity, "This, Muir, is the very poetry of motion."

We also spent some rare evenings by the huge fire in McKinney's old cabin. The log walls are covered with trophies of the chase, for our host has been a great hunter

in his day. Two live pet coons were frolicking on the floor while our grand old host smiled benignly and played with them, the firelight gleaming on his weathered face. How big he seems, thus brought into relief, and what a shadow he casts! The fragrant rosiny fire is the very god of the home. No wonder the old nations, with their fresher instincts, had their fireside gods.

At last, when a mild snow-storm was blowing, we rowed to the lower end of the lake and completed our excursion by slipping on snow-shoes down the Truckee cañon to the railroad.

ASCENT OF "EL YUNQUE."

By N. F. McCLURE,

First Lieutenant Fifth Cavalry, U. S. A.

Mountain-climbing in Porto Rico is fraught with difficulties which are almost unknown in our grand old Sierra Nevada. The boggy, wet ground, the continual humidity, the heavy undergrowth, and the excessive heat unite to make the task one of considerable hardship. In addition to this, the chances are about ten to one that after reaching the summit it will not be possible to get a good view, on account of the fog and clouds. However, the mountains are not, as a rule, very high, and it is not very cold on the summit; hence one may make another ascent or remain near the top all night in the hope of getting a more favorable view on the morrow.

In the northeast corner of Porto Rico stands a great peak called "El Yunque de Luquillo." The high range of which it forms the main feature is called the Luquillo Mountains, and "El Yunque de Luquillo" means "The Anvil of Luquillo." Its resemblance to this implement is very marked when viewed from a point on the high-road half-way between Fajardo and Luquillo.

On March 15, 1899, I camped on the Mameyes River about one mile above the mouth. I made some inquiries, at that time, about El Yunque, which lay several miles directly south of my camp, but was told that the ascent was extremely difficult, and that there was no one in the neighborhood who knew the way. This information, together with a heavy storm of rain and wind which raged during

the afternoon and evening, discouraged me so much that I decided not to try to climb the mountain alone, though I had fully intended doing so. Next day, while passing through Fajardo, on my return, I met the postmaster at that place, Mr. Gilbert, and he informed me that Captain A. C. Hansard, formerly an officer in the English army, lived not far from "El Yunque," and had been to the top. Immediately upon reaching Humacao, I wrote to Captain Hansard on the subject, and a few days later received a reply. He stated that the ascent was a very trying one; that it would take all day to go up and return; and that, as the rainy season was coming on, it would add much to the difficulties of the attempt. He also kindly offered to secure for me the services, as guide, of the only man besides himself who knew the way, and to render me every other assistance in his power.

I was at this time very busy, and the weeks slipped away until May had arrived. At last I decided that it was a case of "now or never," since I felt that it was more than probable that by the next favorable season I might be in another part of Porto Rico, or perhaps not on the island at all. I believed that it would be of great interest to the members of the Sierra Club to hear something of the mountains of this new possession of the United States, and I wanted to have the honor of being the first member of our Club to add this peak to our conquests.

On May 12, 1899, I at last rode forth from Humacao at the head of a little detachment of one sergeant, two privates, and a packer, all belonging to my troop. I was also accompanied by my wife, who had often been with me on such jaunts. For two days we traveled through the foothills of the mountains, remaining several miles inland. The country was beautiful. The green hills, the dashing, sparkling streams, the fertile valleys, the mountains to the left of us, and the sea in the distance to the right, united to

form a succession of landscapes which can scarcely be surpassed.

On the afternoon of the 13th, my detachment went into camp at Captain Hansard's coffee estate, "La Perla." He informed me that it was very late in the season, and that the attempt would now be very difficult, but that it was barely possible that I might even yet secure a favorable day. He at once sent a boy a distance of five miles to the estate of Don Luis Gonzales to secure the guide, and in this he was successful. Sergeant Capple of my troop ("C," Fifth Cavalry), volunteered to accompany me. The details having been previously arranged, we were in the saddle by five o'clock on the morning of the fourteenth. It was quite dark, but the trail being good at the start, we made excellent time. By daylight the route became much steeper and was boggy in many places, but notwithstanding these facts we pushed on rapidly and reached Don Gonzales' house at 6:15 A. M. This place is at an altitude of about one thousand feet on the Mameyes River, about one-third the distance from its source to its mouth. Here we found our guide awaiting us, and we at once crossed the river and began our climb, leaving our horses behind to be taken back to La Perla by one of my men. At first we passed up the hill through some partly cleared land, and at the upper edge of this our guide, after whistling several times, was joined by another Portoriqueño, evidently a companion of his. This man, I found afterwards, had never been up before. We now entered a virgin forest whose beauty it would be difficult to describe. Royal palms, giant tree-ferns, mameyes-trees, long swinging vines of great length and strength, hundreds of varieties of timber, shrubs, and flowers, whose names we did not know, constituted a forest of tropical splendor and magnificence.

The walking now became very difficult, everything being damp and slippery and the trees and undergrowth very

dense, thus shutting off all breeze. A heavy fog soon settled over the country, and while this protected us from the intense heat of the sun, it nevertheless made it impossible for us to see where we were going. Here, the necessity of having a guide became apparent. Without him, under these circumstances, we would have been completely at a loss. After ascending several hundred feet we came to a ridge, and turning to our right (westward) we followed this for over half a mile. We then left it to our right, and descended to a small stream a short distance below. I noticed now that our guide followed up this, climbing over the bowlders when necessary, but never leaving it. There were two reasons for this, though both were at the time not apparent. One was that the stream found its source very near the summit of El Yunque, and the other was that the undergrowth was so heavy on either side that the waterway afforded the only open route. Even here the two natives were obliged, from time to time, to cut a passage with their machetes through the overhanging vines and plants.

At 8:30 A. M. a heavy shower came on, and we took refuge for ten minutes under a ledge of rock. I was now filled with gloomy forebodings, for the clouds and rain made it almost certain that when we reached the highest point we would be unable to see anything. As soon as the shower let up a little I pushed on, for I feared from all I had heard that the afternoon would be well along before we reached the summit. We were soon soaking from the dripping foliage; but it needed not this to make us wet, for perspiration rolled from us. There was but little evaporation, and for this reason when once wet we remained so for the rest of the day. The timber grew smaller as we ascended, and when we finally quit the little stream near its source there was nothing left but a heavy growth of shrubby and tropical plants, none of which rose to any consid-

erable height. About two hundred feet above the point where we left the stream, the bushes became so matted together that we were obliged to get on top of them and work along for about one hundred yards at a distance of eight or ten feet above the ground. Then, suddenly, we came to a little open space which had been cleared away, and our guide informed us that we were on the summit. I could not believe it, as it was not yet ten o'clock. I was bitterly disappointed, for the heavy fog obscured everything. I asked the guide if he thought it would soon clear up, but received no encouragement.

There appeared to be absolutely no hope of getting a view that day. Sergeant Capple now busied himself in trying to make a fire, for both ourselves and the natives were chilled by the strong wind blowing on our wet clothes. It was the first time that I had ever felt the desire for a fire since my arrival in Porto Rico, and it is worth while to make this trip just to experience this sensation. In looking about for some dead wood, I noticed some bushes that had been previously cut, and upon examining them found the trunks and leaves were still green. In astonishment, I asked the guide if he knew how long they had been cut. He replied that he had cut them when on the mountain nine months before. They were still living, and apparently as fresh as ever. This phenomenon is due probably to two causes, viz: to the nature of the shrub, and to the extreme dampness of a place where rain falls on almost every day of the year. A few days later, while mentioning this discovery of mine to a friend, I was shown another plant growing near the seashore whose leaves lived for several months after being plucked.

About half an hour after our arrival, the sun suddenly burst through the fog, but disappeared again in a few seconds. This was repeated a number of times, and my hopes began to revive. At about eleven o'clock Sergeant

Capple, whose first name is Eli, succeeded in kindling a good fire out of wet wood. The guide was much surprised at this perseverance, and assured us that it was the first fire ever built on El Yunque, as the extreme dampness there made such a feat almost impossible. It was literally a case of "Get thar, Eli!" and he "got thar."

Just after this I arose from the fire, stepped to the eastern edge of the little clearing, and looked over. I could not help uttering an involuntary shout of triumph, for there, spread out at my feet, lay the whole eastern end of the island of Porto Rico. Under the influence of a strong wind and the sun's powerful rays, the fog was being rapidly dissipated. In twenty minutes the land was clear, though the mist still hung over the sea in a radius of thirty or forty miles. For this reason, the view was not perfect, but nevertheless I considered myself unusually fortunate to get even this half a loaf.

The entire eastern part of the island was in plain sight. The towns of Guayama, Fajardo, Rio Grande, and Carolina were distinctly visible, and, the capital city, San Juan, together with the harbor of the same name, formed a picture that must have rivaled that of Naples from the summit of Vesuvius. To the north, east, and south the sea stretched away until lost in the fog. All the islands along the eastern coast could be seen, Vieques (Crab) Island being by far the largest and most conspicuous. It is also mountainous, and one of its little conical peaks rises to a height of probably one thousand feet.

On account of the mist, Saint Thomas, Santa Cruz, and the rest of the Danish West Indies were not in sight, though they can be plainly seen on a favorable day. It is said that on a clear day the sea is visible from where we stood at every point of the compass, and I have no doubt that this is true. Near El Yunque are three other peaks almost as high. These four make a trapezium, of which "The Anvil"

forms the northern corner. The longer diagonal of this figure is about four miles, and the shorter about three and one half. About noon we "breakfasted," as they say in this benighted country. Among other things, the two natives had a large crawfish, caught within a mile of the summit, which they cooked on the live coals. They told us that all the mountain streams thereabouts contained great quantities of these fish.

By one o'clock in the afternoon the clouds again closed in, obscuring all below, and we began the descent. I now discovered, for the first time, how great had been my exertions in going up; for I found that my legs almost refused to support my weight, and to relieve them I often swung myself along by catching with my hands to the vines and branches overhead. The rocks were so slippery that both the sergeant and I, who wore shoes, could scarcely keep our feet. The natives, being barefooted, had a considerable advantage over us in this respect. It was about 4 P. M., when, pretty well exhausted, we reached Don Gonzales' house. He invited us in to have some beer, and after a rest of a quarter of an hour we felt much refreshed and proceeded on our journey. We covered the five-mile walk to Captain Hansard's by 6 P. M., and right glad were we to reach camp. Next day, and for several days after, I was so stiff that I walked with a limp; but Nature soon reasserted herself, and in a week I was as good as new.

The scene from El Yunque is one of the finest in the world when the weather is favorable. The combined land and sea view, the numerous cleared fields and sugar plantations below, the thousands of acres of forest, the rugged mountains, all unite to form a panorama of magnificence seldom surpassed. As to the altitude of the mountain, Captain Hansard tells me that he has twice measured it with an aneroid barometer, and made it each time about 3,200 feet; Don Luis Gonzales claims that it is 1,400 me-

ters, or 4,550 feet; while one old Spanish map gives it at 1,520 meters, or 5,000 feet. Captain A. C. Macomb, Fifth Cavalry, wrote me recently that our Geodetic Survey gave it as 3,872, while the official Spanish height is 4,080 feet; but I do not know the sources of his information. I should say that it is 3,700 feet in altitude, and as this is practically straight up from the sea-level it makes a good climb. Of one thing I am certain, and that is, that it is the highest mountain in Porto Rico. It stands the last mighty sentinel on the eastern frontier of our glorious country. The western frontier is guarded by the peaks of the Philippine Islands, nearly half-way round the globe towards the setting sun.

To any one wishing to ascend "The Anvil," I would recommend going to Captain Hansard's, six miles south of Luquillo, and getting a guide; but if for any reason this cannot be done, then "go it alone," and follow up a stream as we did. If the weather be clear, one will have no difficulty in finding the right peak. The best time to make the attempt is during what is known here as the dry season, which varies more or less, but may be said, in general terms, to include the months of January, February, and March. During this period it rarely rains more than once or twice a day, and there will be a day now and then when it does not rain at all.

Humacao, Porto Rico, May 23, 1899.

ANOTHER PARADISE.

BY BOLTON COIT BROWN.

Mr. Muir once remarked that the poorest mountaineers always have the most adventures. In the light of this, we can look back upon our two months' trip (1899) and please our pride by noting the absence of falls, predicaments, or disasters. Thoreau says,—and Lucy and I agree with him,—that “a man sits as many risks as he runs.” Applying this to our two-year-old daughter, we put her on a burro, and whither we went she went also. And she enjoyed it all—grew rosy, hearty, and hardy, just as big folks do in the mountains. She did not so much as bump her head all summer, and except for the time a rattlesnake slid too close to her, and once when an owl tried to drag her out of her little nest and fly away with her, she had no disagreeable experiences whatever. Our camping was of the simplest—no tents, stoves, or other superfluities. The child lived mostly on malted milk, chocolate, and “trout fish.” I verily believe she injured the fishing by her consumption of these last.

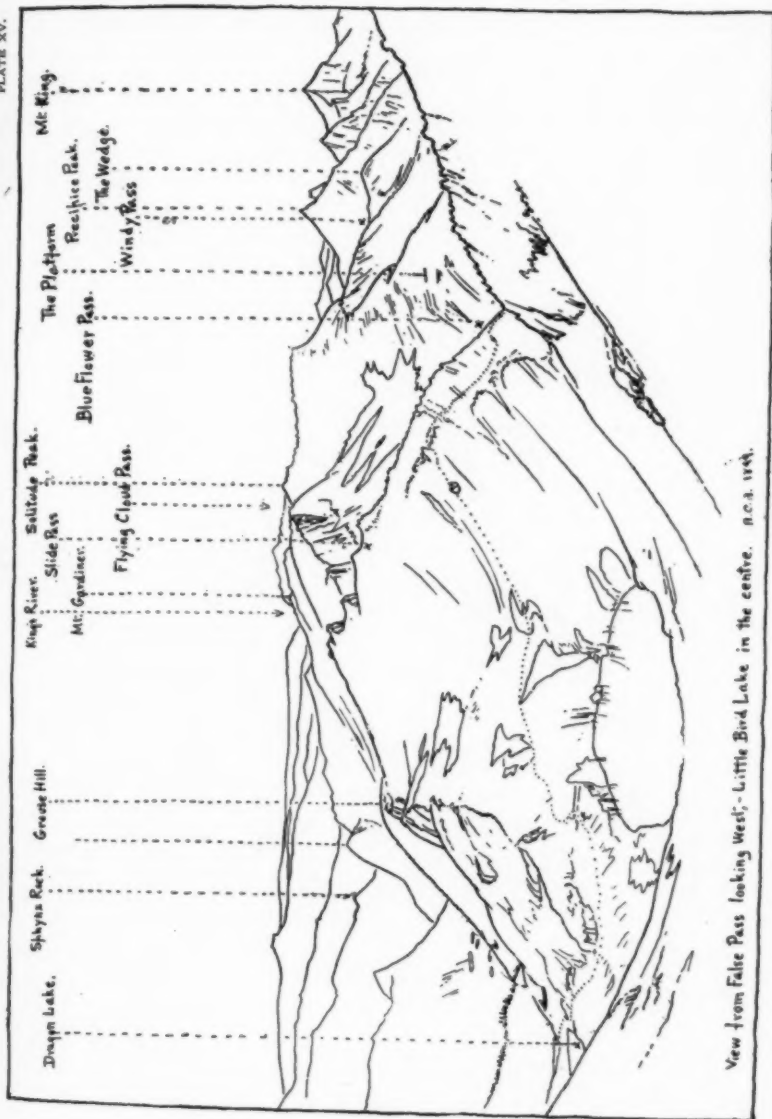
Our route was from Sanger, via Millwood and the “old trail” to King’s River Cañon, up Bubbs’ Creek,* past the mouth of South Cañon, and so up to Bullfrog Lake. Half a mile above the lake, a small stream flows into its inlet from the north. Upon this stream, two hundred yards above the point where the Independence Trail crosses it,

* Mrs. Brown suggests that this stream be called *Bubbling Creek*. Why not? Let Bubbs have the trail—perhaps he made that; but *why* should his unfortunate cognomen include this glorious mountain stream? Would it not be more fitting if we went up Bubbs’ Trail; and went a-fishing in *Bubbling Creek*?

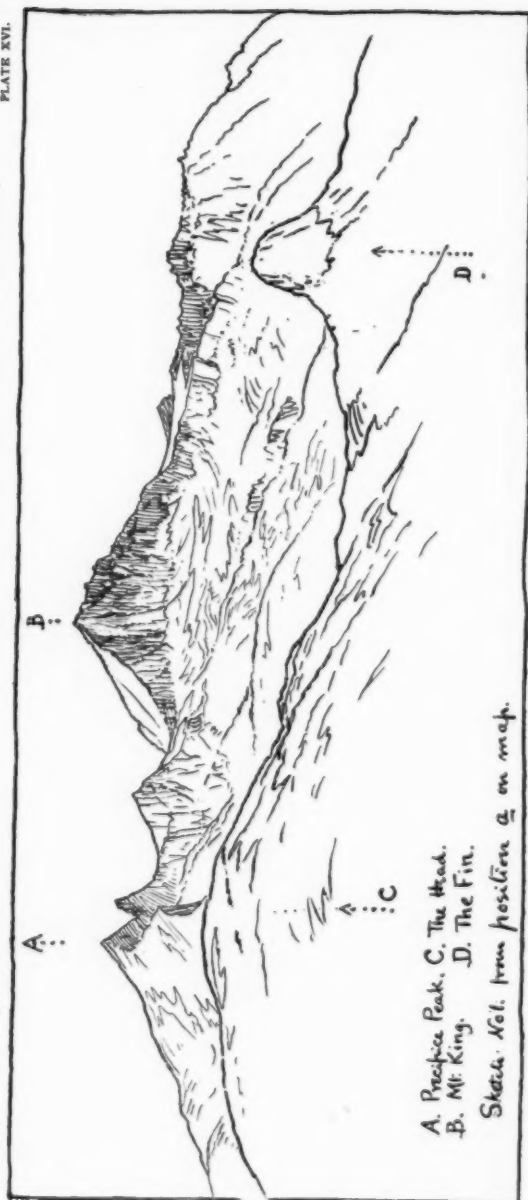


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|---------------------------------|-------------------------------|--------------------------------|
| 1. Mt. King (13200) | 14. Lake Charlotta | 25. Slide Pass |
| 2. Mt. Gardiner | 15. Bullfrog Lake | 26. Blue Flower Pass (12,400) |
| 3. The Labyrinth Lakes (11,500) | 16. Little Bird Lake | 27. False Pass (12,800) |
| 4. Precipice Peak (13,000) | 17. Dragon Lake | 28. Knapsack Pass (13,000) |
| 5. Ultima Lake (12,000) | 18. The Fin (12,200) | 29. Flying Cloud Pass (12,600) |
| 6. Cloud Lake (11,200) | 19. The Head (12,500) | 30. Ice Sheet |
| 7. Lake Lucy (10,400) | 20. Solitude Peak (13,900) | 31. Sink Hole, - dry |
| 8. Eleanor's Island | 21. Mt. Rixford (13,500) | 32. The Tail |
| 10. Wonder Lake | 22. The Black Castle (13,200) | 33-34 Main Crest |
| 11. Robin's Egg Lake | 23. Glacier Spike | 41-43 Southern Boundary |
| 12. Lake Sapphire | 24-29 The Platform (12,200) | |
| 35 The Wedge | 40 The Pyramid | |
| 36. Windy Pass (Sketch 5) | 41-32 The Sea Serpent | |
| 37 Grouse Hill | a. Sketch No. 1 | |
| 38. Saddle Pass. | c. Sketch No. 3 | |
| 39. Island Lake. | d. Sketch No. 4 | |

All the lakes east of The Sea Serpent are the "Eastern Lakes"; - Those westward of it, the "Western Lakes."



View from False Pass looking West; - Little Bird Lake in the centre. n.e.a. 1894.



at an altitude of over 11,000 feet, we camped for three weeks.

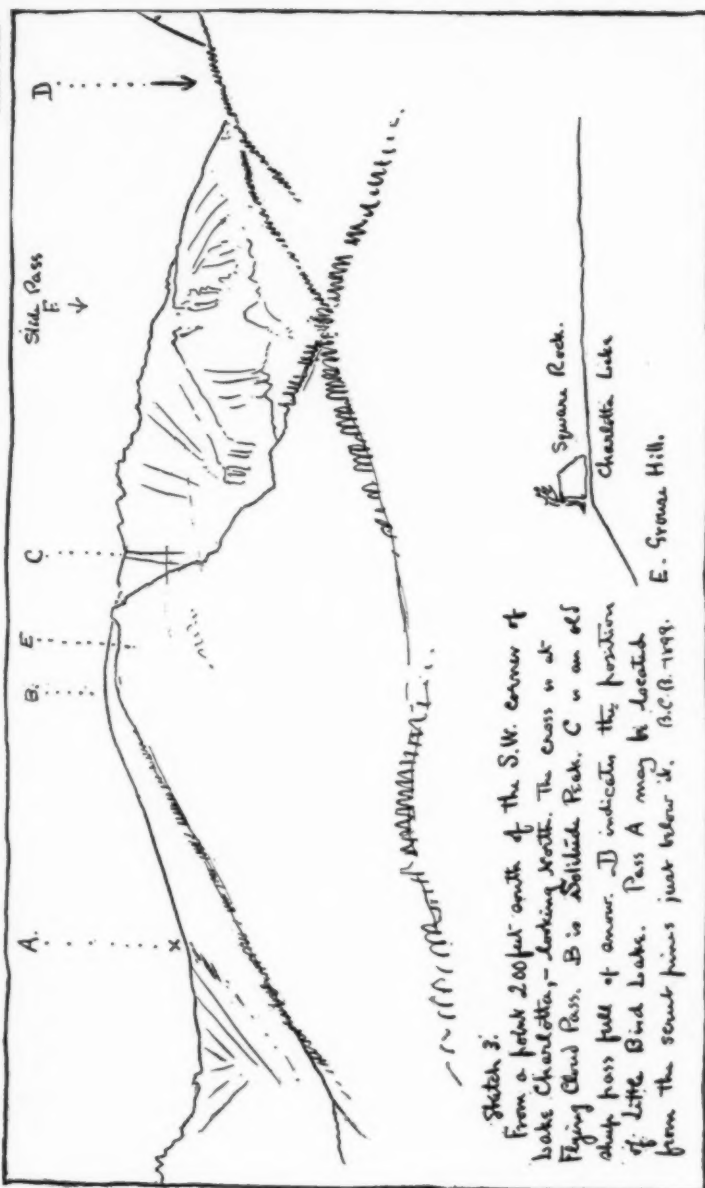
During this time I made several exploring trips into the basin next north of the Bullfrog Lake Basin. Notwithstanding its nearness to a well-known trail, the inaccessibility of this country has kept it almost unknown, and, so far as I know, quite unvisited, until this summer. It contains from twenty-five to fifty square miles, is about as wide as it is long, and, after I had gone all over it, I put it down as distinctly the finest and completest epitome of Sierra scenery I had seen. Whatever makes the charm and the peculiar character of the High Sierra is here in typical perfection — peaks, walls, precipices, snow-fields, table-lands, gorges, ice-smoothed rocks, willow-bowered cascades, mountain-pines, columbine, and many other blossoms, perfect and extensive meadows, and lakes—ah, the *lakes!*—in every variety, form, and position — fifty of them if there is one, and streams, from the tinkling, flower-spattering, grass-hidden rill to the hoarse boulder-rolling torrents. These latter—one day when I was there—sounded like an artillery-battle as they plunged their storm-swollen volumes of yellow flood down the mountain-sides. Surely that day the mountains said, as one did to Thoreau, "Here comes one of our friends; let us get up a good storm to welcome him." Hour after hour wind-driven torrents of rain and hail came down. The ground was grayed with ice-pebbles. The lake-surfaces roared and hissed under their beating. Blinding lightning-flash and tremendous detonations of thunder-crash, peal on peal and roll on roll, filled that mighty bowl with the grandeur of elemental tumult.

This day I was out fourteen hours, and, despite the storm, cooked two hot meals. I arose at half-past two, and at the crack of dawn left camp for Flying Cloud Pass. My route is dotted on the map. I traveled very slowly,—merely wandered, in fact,—lying under rocks at the heaviest

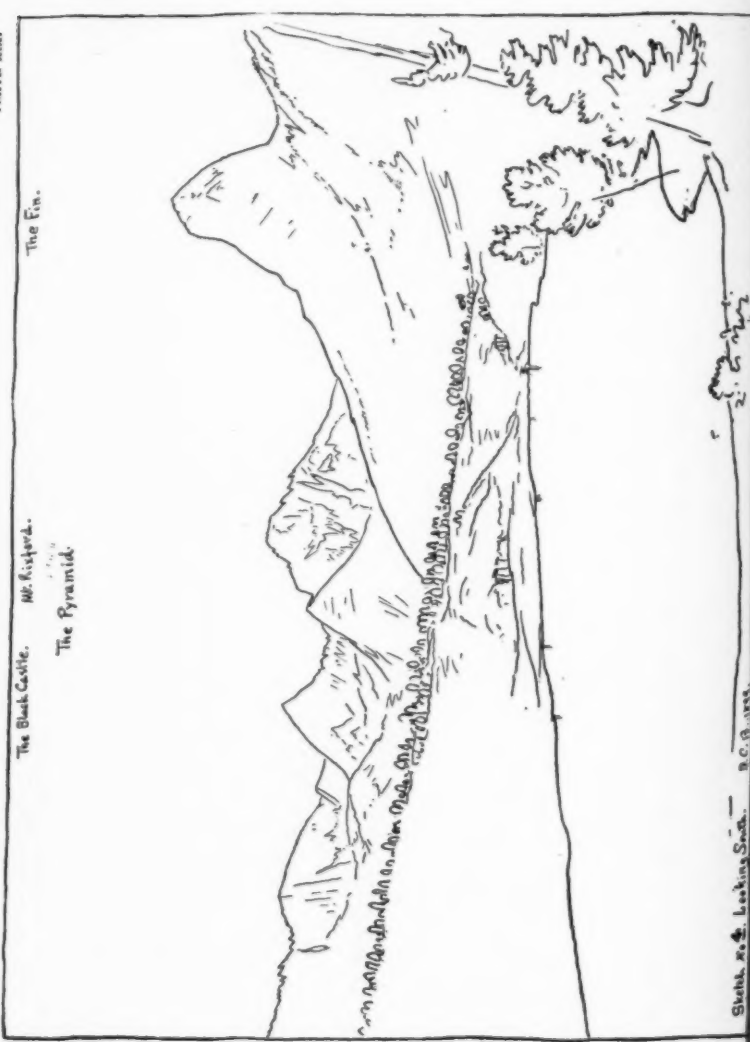


Sketch 2.
Flying Cloud Pass.
Salted Peak to the left.
Cloyd Lake below. Looking South.

Sketch 3.
Solitude Peak to the left.
Cloud Lake below. Looking South.



Sketch 3.
From a point 200 feet south of the S.W. corner of
Lake Charlotte, - looking North. The cross is at
Flying Cloud Pass. B is Solitude Peak. C is an old
sharp pass full of snow. D indicates the position
of Little Bird Lake. Pass A may be located
from the scrub pines just below it. B.C. 11-1199.



storm-gusts, working out bits of trail, making in the less fierce moments dripping sketch-notes of the scenery, and so on until late in the afternoon, when the breaking storm found me toiling up the northern wall of the southern ridge. Reaching the summit just at sunset I saw from Knapsack Pass our camp-fire two thousand feet below. Lucy heard me shout from here. Down the long slope I went with leaps and bounds a kangaroo would have envied, and in twenty minutes reached camp.

Lucy and the baby had made a good fight against the storm, but the channelings of the water showed that they had almost been washed away. Packed in dry blankets, the child sat for several hours under the six-foot tarpaulin roof quite contented, listening to the thunder and watching with baby-wonder the accumulating hail-piles — "Just like washing rice," she said. Her mother had kept a great roaring fire hard by all day, and withal no one was the worse for the storm.

One morning Lucy left camp (I stayed with the child) and crossed the divide at False Pass (see her route dotted on map), descended to the Eastern Lakes, tramped down northward below the Fin, returned over the divide by Blue Flower Pass, and walked into camp about five o'clock. Doubtless she was the first woman ever in that basin. Some friends of ours visited the region a little later and named the largest lake after her. I named one of its islands after the infant — Eleanor's Island. I hasten to add that I should not have done it had she not possessed a suitable name.

Earnestly desiring to find an animal pass to this basin, I explored every foot of the crest of its northern wall from Kearsarge Pass to Flying Cloud Pass. The discoveries I made are on the map. Flying Cloud Pass has certainly been used by sheepmen as an animal pass; but its northern side is rough and should be seen before being attempted.

False Pass and Knapsack Pass are convenient for foot-travel, but impossible for animals. False Pass has a *very* steep and very long descent on the north. I descended once along the channels of the northeast face of Mt. Rixford, but I cannot recommend it. It is dangerous. Slide Pass appears to have been used by sheepmen; but here again one should work out his route before attempting to take animals over it. Not very far to the west of Slide Pass is a narrow gate through the crest, and this also the sheepman has undoubtedly used, though whether for pack-animals or sheep only, I cannot say. It was a mere ribbon of steep snow on the north when I visited it. Blue Flower Pass is my own private discovery, and I was much pleased with it until, after monumenting its northern side almost down to the basin's bottom, I came to a passage through bed-rock on edge. I worked an hour or two building steps here, but still I cannot report it as passable. But a certain amount of work—not more than a few hours, I should say,—ought to make it possible. The southern approach to this pass is not very difficult,—that is, for real mountain animals.

As to the map herewith, it will be found quite practicable to travel by, though no doubt in such things as the relative sizes of lakes it is very funny. Moreover, there are a great many more lakes in the basin than are shown on the map. Taken in connection with the topographical sketches, it should enable any one, without loss of time, to go to any part of the basin. It is to be hoped that another season will see found or made a reliable animal trail over this basin's southern wall. Once down to either the eastern or the western group of lakes, there would be no serious difficulty in moving pack-animals almost anywhere. The western lakes are on a sort of shelf, and must be some six hundred feet higher than the eastern chain. At either group plenty of feed is to be found; and the defacement

Blue Flower Pass.

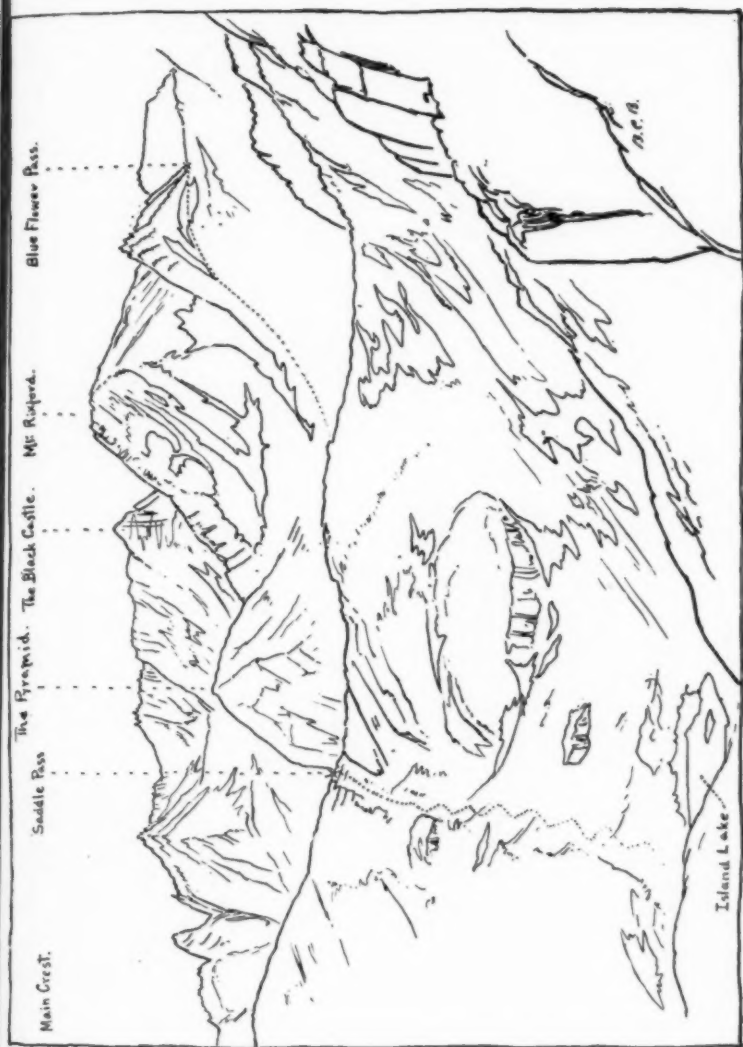
Mt. Rixford.

The Black Castle.

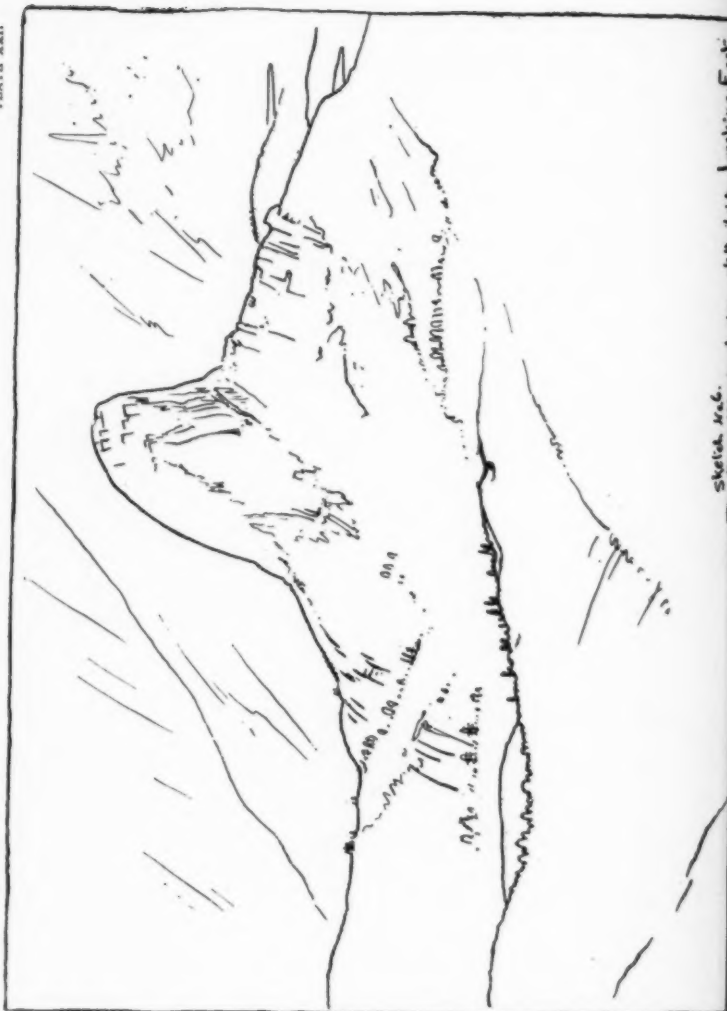
The Pyramid.

Saddle Pass

Main Crest.

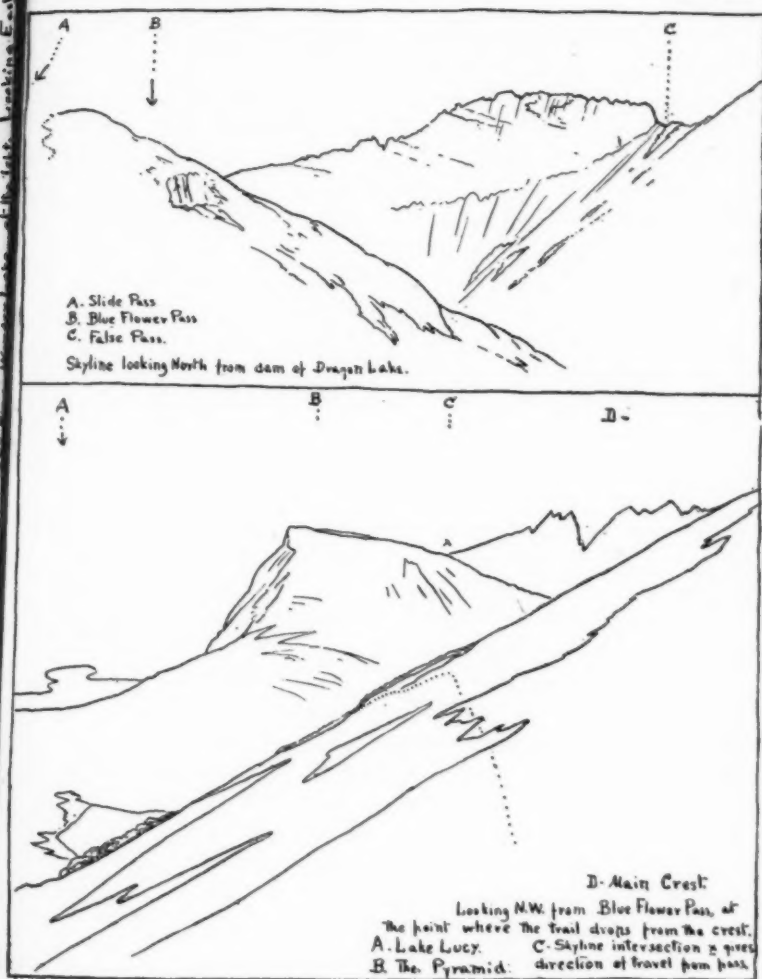


Sketch No. 5. Looking S.E. from Windy Pass.



Sketch No. 6. View of Mt. St. Helens looking East.

Sketch No. 6. View from the dam of Dragon Lake looking East.



and destruction by sheepmen have been less here than in any place I have visited. My first thought was, " *This* is the kind of High Sierra that John Muir talks about in his book."

Mr. Geo. W. Naylor, of Independence, (forest ranger,) told me that an "old prospector" once told him that twenty years ago he had taken his animals over this divide just north of Bullfrog Lake. On the strength of this I made a special search for his pass, but failed to discover any place where it seemed even remotely possible to put an animal over. Mr. Naylor, after visiting the basin, agreed with me as to its extraordinary beauty, and desiring to have it quite perfect, he next day took his companion, and between them they carried over a pail containing a dozen trout, which fish they liberated in the hitherto fishless waters of Lake Lucy. And, by the way, speaking of trout, three years ago I carried up from Bullfrog Lake nine large trout and put them in the Kearsarge Lakes. Having this summer investigated the matter, I can report that they flourished, and that now there are trout in *every* lake between the Main Crest and Bullfrog Lake. Mr. Naylor made this true this summer by taking fish away up to the last glacial pond just at the northwest foot of University Peak.

Mr. Naylor heard of a pass into this northern basin by way of its western wall — somewhere near Ultima Lake. Being determined to get in there to camp, he took his animals and disappeared, aiming to cross the first divide somewhere a mile or two west of Flying Cloud Pass, and, descending thence on the western side of the basin's western wall, to cross that wall, as I said, near Ultima Lake. As he never came back, I suppose he got in.

This basin could no doubt be reached with animals by crossing over from the Copper Creek Basin into Paradise Valley, ascending to the head of that, thence following its eastern fork, and from that turning up to the south, where

the basin's drainage stream comes down. I have no doubt this was often done by sheepmen. But it is a dreadfully roundabout, difficult, long way. Moreover, the trail that leads down into Paradise Valley is almost impassable now, and by the time the sheepmen have ceased for a year or two to use it, it will practically cease to exist. Trails of this sort have never been monumented, and a few seasons will see them overgrown, washed out—in fact, lost. This is a matter the Sierra Club should promptly and effectively interest itself in. Next season should be entirely devoted to *trail-marking*.

All the altitudes herewith reported are simply my estimate. Mt. Rixford, however, must be excepted. I found Dr. Rixford's record on that, and the height was therein given as 13,500 feet.

KING'S RIVER CAÑON TRAIL NOTES.

BY VERNON L. KELLOGG.

The Grand Cañon of the South Fork of the King's River will certainly be visited by increasing numbers of mountain-lovers. From a headquarters camp in the cañon the peaks of the King's-Kern Divide (Junction, Stanford, Crag Ericson, No. 4, Brewer), the great triumvirate, Williamson, Barnard, and Tyndall, in the Main Crest just south of the Divide, the peaks of the Main Crest from Junction north to the Palisades (Keith, Bradley, University of California, Kearsarge, etc.), Mts. Gardner and King, Bolton Basin, and all the interesting mountains and gorges whose waters flow into Paradise Cañon and Bubb's Creek, are readily accessible. With the new trail, much shorter than the old, now being made by Forest Ranger Kanawyer from Millwood to the cañon, the region is made more easily, at least more quickly, accessible from the outside than it has been heretofore. Mr. Kanawyer will also keep provisions and camp supplies for sale in the cañon. With this probable increased visitation of the cañon in mind, I have written out the following brief account of the course, character, and lengths of some of the trails of this region. The notes may help the new-comer in planning his excursions.

First, as to getting in to the cañon itself. One goes by rail to Fresno or Sanger, by stage a long day (or better, a night, to escape the heat of the valley and foothills: Gallagher and Deneen, address Sanger, will take you, if you are a "stageful," through by night) to Millwood, or, when the new trail is completed, to Long Meadow, and thence

by pack-train into the cañon. The old trail has been described several times in the BULLETIN. The distances between camping-places and special landmarks on it are given (in hours) exactly by Mr. Lincoln Hutchinson in the BULLETIN (Vol. II., p. 111). To traverse this trail from Millwood to your definitive camp in the cañon requires, for the ordinary party, two days and a half (two nights' camping on the trail). Coming out from the cañon the trip is made in two days (one night's camping on the trail). By the new trail it is expected that a party can leave the cabin "hotel" at Long Meadow rather early in the morning, lunch in Big Boulder Cañon, and reach the King's River Cañon by night of the same day. The King's River will be reached, however, several miles lower down than now reached by the old trail, and it will require the following forenoon to get up to a place in the cañon desirable for headquarters camp. The new trail keeps much closer to the King's River than the old; gives, in fact, intermittent views of the river and cañon all the way in. It ought to be an exceedingly picturesque way.

The cañon can, of course, be reached from other points. From Visalia, for example, one follows a wagon road to Big Meadows, and thence by a trail to Horse-Corral Meadows, where the old Millwood trail is joined.

Once in the Grand Cañon, the best place for a headquarters camp is on the north side of the river somewhere near the mouth of Copper Creek. Mr. J. N. Le Conte camps near the mouth of Granite Creek, a mile down the river from Copper Creek. Professor Brown camps near the confluence of Paradise Cañon and Bubb's Creek, a mile or more above the mouth of Copper Creek. There is feed for animals between the mouths of Copper and Granite creeks, and also at the confluence of Paradise and Bubb's.

In giving the lengths of the trails in the neighboring region, I shall take the mouth of Copper Creek as a point

of departure. For a guide to the region Mr. Le Conte's sketch-map of Bubb's Creek Basin published in the BULLETIN (Vol. II., No. 2), is the best you can get. As all the important topographical features of the region and the courses of the trails are plainly shown on this map, I shall only undertake in the following notes to give the lengths or distances in terms of time and a few statements as to the character and condition (difficulty or ease, availability or non-availability for animals, etc.) of the trails. It is needless to say that a trail's length, in time, varies with the tramp and climber. The times given are ordinary times.

Copper Creek to Fox's Bridge.—An easy trail, or rather two easy level trails, one on each side of the river, perfectly distinct, following down the river past the mouth of Roaring River (to visit Roaring River Falls take the trail on south bank). Animals. To get to south bank of river, cross on log-jam between mouths of Copper and Granite creeks, or cross on foot-log a little above mouth of Granite Creek. Ford a little above foot-log. Two hours; to Roaring River Falls, one and a quarter hours.

Copper Creek to beginning of Paradise Cañon.—Easy level trail up the river on north bank. Animals. Forty minutes. To beautiful falls in Paradise Cañon follow distinct trail up west bank of Paradise. Animals. Short distance. [Met grizzly once near falls!]

Copper Creek to top of Grand Sentinel.—Down King's River to foot-log; cross to south bank; up (east) south bank a few rods to fence, where find dim trail to south through bushes (trail necessary here) into Avalanche Cañon. Then up Avalanche; steep, faint trail; keep mostly to bed of stream or near it (at first no water, later too much); (trail not so necessary); leave cañon to left just beyond large smooth rock-face by single conspicuous weather-beaten

tree (two or three hours from beginning of trail); follow up gully, steep, no trail, no water, or but trace, gully fading out to summit 3,480 feet above floor of cañon; the whole ascent three to four hours; steep and tiring, but not otherwise difficult; not dangerous; guard against loose stones in Avalanche Cañon, also loose rattlesnakes! No water to drink (carry canteen) after leaving Avalanche Cañon. View of the Grand Cañon and Bubb's Creek the best obtainable; good view of Mt. Brewer and University of California Peak.

Copper Creek to Goat Mountain.—Goat Mountain is a good "first mountain" to climb from the cañon. It is an excellent point of orientation, standing as it does out of the Main Crest, and high enough to include a fine sketch of it in its panorama. Trail is the regular Granite Basin trail, running north from mouth of Copper Creek on west side of Copper Creek for about two hours; steep at first; crosses Copper Creek at spring (Wood's sheep corral); follow till small flattish cairn of eight or nine stones on larger rock is reached; here take the right branch of trail, rather faint, till convenient crossing-place (first group of pine trees on bank of stream) on stream to the right is found; cross to right (from now on no regular trail, occasional sheep-paths); zigzag up steep, scrub-covered hillside; work down, keeping rather to left, to dry gully, cross and up to summit of little ridge; keep north along center of this ridge until at very foot of the shoulder of Goat Mountain (the mountain directly in front to north), and work to right among stones over ridge, and camp (near timber-line) in low pines near little streamlet; small ponds just above, and large meadow for animals some distance below. This spot is about four hours from mouth of Copper Creek. Fine view from this camp of Paradise Cañon region, Mts. Gardner, King, and Brewer. Summit of Goat Mountain 12,500 feet; can be

easily reached in two hours or less. From Goat Mountain camp to mouth of Copper Creek about two and a half hours. The whole trip can be made in one day, but hard; better take a day and a half. Trail all easy, a little troublesome picking out way after leaving trail. Animals may be readily taken to timber-line camp. Ascent of summit from timber-line camp perfectly easy. (See bearings of peaks in panorama at end of article.)

Copper Creek to Lake Charlotte and Bullfrog Lake.—

Regular trail from cañon over Kearsarge Pass to Independence. Animals. From mouth of Copper Creek follow up north bank King's River to ford and log jam across Paradise Creek (forty minutes); cross, turn to right and climb steep but short hill into Bubb's Creek Cañon; follow up Bubb's Creek on north bank, reach mouth of Rhoda Creek (about three and a half hours); here either turn to left, keep along west bank of Rhoda Creek, climbing steeply, then following up Rhoda Creek on north bank to Lake Charlotte, and on to Lower Bullfrog Lake; or cross Rhoda Creek near mouth, keep up Bubb's Creek (north bank) to where trail turning to left climbs steeply up to Lower Bullfrog Lake. By either trail it is a day's journey from mouth of Copper to Lower Bullfrog. Trail all fair, and always distinct, good grazing for animals; sometimes rather closely eaten. Make this headquarters camp for climbing University of California Peak, Mt. Rixford, etc.

Bullfrog Lake to Kearsarge Pass.— Plain, easy, well-worn trail (animals) on north bank east to Pass. About one hour. From Pass easy climb to summit of Mt. Gould (13,391 feet), one hour and a half. Mt. Gould is the first point or peak in the Crest north of the Pass.

Bullfrog Lake to University of California Peak.— No trail. Set out directly toward peak, following string of lakes

which leads into northwest basin of peak; Kearsarge Pinnacles, sharp, ragged ridge, on right. Climb this ridge to right about even with last lake in basin, coming out on western slope of mountain; work up, keeping to right (south and east), and make last climb over rough rocks on south face, in fact a little east of south. Last stretch a little difficult. Time from Bullfrog Lake about three and a half hours. Panorama fine; the tremendous sheer drop into Owen's Valley impressive; best point to view the great valley stretching north and southeast of Main Crest and the mountains far to east.

Bullfrog Lake to Mt. Rixford.—No trail. Begin climbing immediately to north of the lake; into basin (Rixford Bowl); to right (east) to ridge, and along ridge (north) to summit (13,300 feet?); about two hours. Fine view of Bolton Basin immediately below to north; also of head of South Fork. Fine view of Main Crest from Palisades south to Junction Peak. Mt. Whitney also visible. In descending take slide of loose stuff at left (east) of first saddle under the summit into the gorge of Colored Peak (next peak to east), and follow streamlet. Descent less than one hour. Good sport! Mt. Rixford is indicated on Le Conte's map (BULLETIN, Vol. II, No. 2,) as unnamed mountain immediately to west of Colored Peak. (See bearings of points in panorama at end of article.)

Copper Creek to East Lake.—Follow Bubb's Creek trail as described in "*Copper Creek to Bullfrog Lake*" to mouth of South Fork of Bubb's Creek. Here find branch to right, cross Bubb's Creek, ford and fallen logs just below, and follow up South Fork on west bank; trail plain for a while, but rather hard to follow after getting on rocks; many little cairns (too many, trail too diffuse); trail keeps rather away from stream bank; distance from mouth of South Fork to East Lake, one and a half to two hours; lose time on

account of diffuse trail; trail some places rather uneven for animals, though not really bad. From Copper Creek to East Lake an easy day's journey, with long lunch stop and early night camp. Camp on west side of East Lake near mouth of Ouzel Creek. (See President Jordan's sketch map of East Lake region in BULLETIN, Vol. III., No. 1.) Fine grazing for animals on shore of lake. Make this headquarters camp for climbing Mt. Brewer and Stanford University Peak.

Bullfrog Lake to East Lake.—After "doing" Kearsarge Pass region, one can begin exploring the Brewer-Stanford region without returning to headquarters camp in the cañon, by going from Bullfrog Lake down into Bubb's Creek, follow down it (west) to mouth of South Fork and up (south) South Fork to East Lake. Time, three and a half to four hours.

East Lake to Mt. Brewer.—From camp at mouth of Ouzel Creek take smooth rock (no trail) between Ouzel Creek and Barbara Brook, and make for ridge projecting east from main peak of Brewer (central one of the three peaks visible looking west as you begin the climb). Get on the ridge and follow to summit (13,886 feet); easy ascent. Time three hours or less from East Lake camp. (See trail marked on Jordan's map of East basin of Brewer, BULLETIN, Vol. III., No. 1.) Panorama from summit fine.

East Lake to Harrison's Pass and Stanford University Peak.—No trail (occasional traces of old sheep-trail to Harrison's Pass). From camp near mouth of Ouzel Creek go south along lake to southern shore, cross stream coming into lake from south from west to east on sheep bridge near the lake; to right through willows, and work up slope to left through trees bearing rather to right to little lake just north of Castilleja Lake; follow up (east) stream from this

lake, keeping near water (fine turf footing) to lake; take right-hand bank of this lake, and left-hand of succeeding lakes until the last (in Stanford Basin); go to right of this, follow up gully with large broken rock, and climb steep loose slide to Harrison's Pass (the right-hand slide, the one with lowest summit, the one first east of Crag Ericsson, the great crag at right); note zigzag foot-trail up this slide; from Harrison's Pass keep to left over large broken rock to summit of Stanford; first summit is Gregory's Monument (cairn with club cylinder), second is the higher, and is Stanford. Time to Harrison's Pass about three hours, to summit of Stanford about four and one half hours. Descent from summit of Stanford to East Lake camp, about two and one half hours. In no place difficult or dangerous, unless between Gregory's Monument and Stanford. Panorama from Stanford magnificent. To south is Kern River Cañon, with the great Western Divide (Table, Milestone, and Kaweahs) on its right, and Main Crest (Williamson, Barnard, Tyndall, and Whitney) on its left; view of Junction, Keith, Bradley, and University of California Peak in Main Crest to east and north fine. The great basins to west and east of Stanford impressive. For points in immediate vicinity of Stanford see Jordan's sketch-map of East Basin of Brewer, already referred to, and Bradley's map of East Creek Amphitheater (BULLETIN, Vol. II., No. 5). (See bearings of points in panorama at end of article.)

For accounts of the way from *East Lake over the Kings-Kern Divide to Mt. Williamson*, see Professor Brown's paper "Wanderings in the High Sierra, between Mt. King and Mt. Williamson," (BULLETIN, Vol. II., No. 1).

For account of trail from mouth of *Copper Creek to Tehipite Cañon* (Middle Fork of King's River), see paper by Professor Stillman "To Tehipite Valley from King's River Grand Cañon," (BULLETIN, Vol. II., No. 1).

For the sake of aiding any one climbing for the first time in the King's River Cañon region in getting acquainted with the various peaks of the region I append my compass readings (corrected for magnetic variation; local variation something startling) from the summits of three well-separated peaks, viz: Goat, Rixford, and Stanford:—

From Goat Mt.

Mt. Goddard, N.
 Mt. Woodworth, 10° E. of N.
 Striped Mt., 60° E. of N.
 Mt. King, 126° E. of N.
 Mt. Rixford, 132° E. of N.
 Mt. Gardner, 138° E. of N.
 Univ. of Calif. Pk., 140° E. of N.
 Mt. Williamson, 146° E. of N.
 Stanford Univ. Pk., 150° E. of N.
 Mt. Whitney, 154° E. of N.
 Crag Ericsson, 155° E. of N.
 Mt. Brewer, 166° E. of N.
 Kaweah Peak, 184° E. of N.
 Avalanche Pk., 186° E. of N.
 Grand Sentinel, 194° E. of N.
 Granite Basin, W.

From Mt. Rixford.

Mt. Gould, 80° E. of N.
 Kearsarge Pass, 94° E. of N.
 Univ. of Calif. Pk., 112° E. of N.
 Mt. Keith, 130° E. of N.
 Mt. Whitney, 134° E. of N.
 Mt. Tyndall, 134° E. of N.
 Junction Peak, 142° E. of N.
 Milestone Pk., 176° E. of N.
 No. 4, 180° E. of N.
 Mt. Brewer, 206° E. of N.
 Avalanche Pk., 228° E. of N.
 Rhoda Dome, 245° E. of N.
 Mt. Gardner, 270° E. of N.
 Mt. King, 300° E. of N.
 Mt. Goddard, 316° E. of N.
 Pivot Crag, 318° E. of N.
 So. Palisades, 340° E. of N.

From Gregory's Monument.

Univ. of Calif. Pk., 26° E. of N.
 Mt. Bradley, 58° E. of N.
 Mt. Keith, 90° E. of N.
 Junction Pk., 108° E. of N.
 Mt. Williamson, 126° E. of N.
 Mt. Whitney, 148° E. of N.
 Kaweah Pk., 194° E. of N.
 Milestone Pk., 230° E. of N.
 No. 4, 232° E. of N.
 Mt. Brewer, 266° E. of N.
 Cross Mt., 284° E. of N.
 Rhoda Dome, 316° E. of N.
 Mt. Gardner, 332° E. of N.
 Mt. King, 346° E. of N.
 Mt. Jordan, 350° E. of N.

THE ASCENT OF "MATTERHORN PEAK."

BY LINCOLN HUTCHINSON.

Late in the afternoon, on the 24th of last July, four very tired men and three equally weary burros pitched camp on Rancheria Creek, at a point just north of Piute Mountain. The spot was a charming one; high rugged bluffs rising on either side, culminating in majestic granite walls and crags which caught the glow of the setting sun, while down the stream to the southwest stretched a dreamy vista of forest-covered cañon. We noted, half unconsciously, the beauty of the scene, though we were far too weary to be deeply impressed by it at the moment. Our party, consisting of Messrs. C. A. Noble, M. R. Dempster, J. S. Hutchinson, Jr., and the writer, had left Sonora nine days before with the intention of making our way via Lake Eleanor to Tiltill Valley; thence over the little-explored region to the north-eastward to Matterhorn Peak. Progress had been fairly rapid and free from difficulties till after we left Tiltill, but there had then followed three days of desperately hard work. The day before this one on which we pitched camp on Rancheria Creek, twelve hours of heroic toil from early dawn till nearly dusk had netted us less than one mile and a half as the crow flies; and this very day itself had added not more than six or seven miles to our record. So that now, in addition to our weariness, we were beset by the growing conviction that at the present slow rate of progress, it would be impossible to carry out the trip as we had originally planned it. Our whole outing was strictly limited as to time; we must, without fail, be back in Sonora on such

and such a day; and it was beginning to look as though we should be obliged to turn homeward without having so much as set eyes upon the Matterhorn.

Moreover, there was a strong probability that the difficulties, instead of lessening, would increase as we advanced. Up to this point we had been in a region covered by the United States Geological Survey maps, and these, in spite of the fact that they contained some serious and inexcusable blunders, had been an invaluable aid to us. But to-morrow we should not only pass into a new region, described by Lieutenant McClure as excessively wild and rough, and abounding in almost insurmountable difficulties, but we should be obliged to depend on maps which made no pretense of being as reliable as those published by the Government.

In spite of hard work, the trip up to this point had been a most successful one,— abundance of fresh air and wholesome exercise, a succession of most charming scenes and new experiences, and, above all, a series of the most delightful and picturesque camping-places. We discussed the question in all its details, made new estimates of our stock of provisions, and ere we betook ourselves to the shelter of our sleeping-bags, had determined to push forward for still another day, and then if the outlook did not seem more promising to turn our faces homeward.

The next day brought a pleasant surprise. The difficulties which Lieutenant McClure's description of his exploration led us to suppose lay before us proved to be a mere *bagatelle* when compared to what we had been passing through. The distances were less than indicated on the map, and the route, though rough in places, was neither excessively difficult nor at all dangerous, and before nightfall we were rejoicing in the certainty that the fears of the previous day had been unfounded.

Mid-afternoon of the second day found us pitching camp

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↓ Tower Peak.



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Stubblefield Cañon.

↑
Thompson Cañon.

↑
Rancheria Cañon.

STUBBLEFIELD, THOMPSON, AND RANCHERIA CAÑONS—LOOKING NORTHEAST.

Photograph by J. S. Hutchinson, Jr.

on the head-waters of Matterhorn Creek, at an elevation of about eleven thousand feet, close to the base of the peak which was our objective point. The remainder of the afternoon was spent in resting preparatory to the morrow's climb, and in discussing a new problem which now confronted us. Rising above our camp a mile to the northwest, and separate from the main ridge of the Sierra, was a sharp peak, which on Lieutenant McClure's map and in his articles in the *SIERRA CLUB BULLETIN* is called Matterhorn Peak; while towering above us to the northeast, and forming part of the main crest, was another much higher peak, which on the Sierra Club map bears the same name. Which of these two was the real Matterhorn?—which should we attack on the morrow? Neither of them bore any marked resemblance to the true Matterhorn of Switzerland, and their appearance therefore gave no clew as to which was the one we had come so far to conquer. After a long council of war, our decision was made. We had come for glory; our attack should be directed against the peak which was highest and apparently the most difficult of ascent. What's in a name? Matterhorn or not, the peak in the main ridge was the one for us to scale. The decision made, we crawled into our sleeping-bags, mused a while as we gazed upward into the cold, dark, star-besprinkled sky, and dropped away into dreamland thinking of the many terrors inseparably coupled with the dread name of Matterhorn.

The gray dawn found us equipped with rope, ice-ax, and cameras, groping our way upward over confused talus slopes toward a saddle in the ridge which extended southward from the peak. Skirting a small glacier which lay directly south of our objective point, we passed across the ridge and turned northward directly toward the summit. The climb was a hard one, but it could not be called extremely difficult nor at all dangerous for any one reasonably

cautious and at all accustomed to climbing. We found no occasion to use either rope or ax.

The summit, which is a great jagged tooth in what is known as the Sawtooth Ridge, was reached in something less than three hours from camp. The day was a beautiful one and the view inspiring. Directly north, close at hand, were the weird crags of the Sawtooth Ridge; to the east lay the barren volcanic wilderness which nearly everywhere characterizes the eastern slope of the Sierra; to the west, the vast confused network of crags and cañons, with black forest slopes beyond. But the view to the south was the grandest and most beautiful part of the panorama; the great bold mountain masses of the Conness and the Lyell groups—broad, bold strokes in blue and white on the wonderful canvas of nature. The intense exhilaration of the climb, the noble grandeur of the scene, and the wild exultation of standing on a spot which, so far as we were able to judge, had never before felt the pressure of human foot, combined to make up an experience never to be forgotten. We lingered long, drinking in the beauty of the scene, and then, after building a monument in which we left a Sierra Club Register, reluctantly made our way back to camp.

Our homeward journey was made without special difficulty or incident worthy of particular note. We followed, in the main, Lieutenant McClure's route as far as Conness Creek, then turned down that stream to the Tuolumne River, which we forded below Tuolumne Falls. Then crossing the ridge to Cathedral Creek, we ascended the latter to the Tioga Road.

Since reaching home we have learned definitely that the peak we ascended was the Matterhorn, having been named as far back as the time of the Wheeler Survey in 1878, and that Lieutenant McClure was therefore mistaken in applying the name to the lower peak to the west. That

SIERRA CLUB BULLETIN, VOL. III. PLATE XXV.



SUMMIT OF MATTERHORN PEAK.



the name is a poor one there can be no doubt, for, as I have already said, there is only the barest suggestion of resemblance to the wonderful Swiss mountain after which it is called. Yet the name is of so long standing that it seems hardly best to think of making any change.

Aside from the slight disappointment in the character of the peak which we had set out to climb, the whole trip was a most successful one. Probably nearly all members of the Sierra Club are familiar with the beauties of the Lake Eleanor and Lake Vernon regions. Beyond there the country increases in ruggedness and grandeur, and from first to last we found a succession of beautiful and imposing scenes.

I cannot close without a word in regard to the work of the Yosemite Park patrol. Going as we did into the most remote corners of the park, and in a year when the troops were mostly engaged elsewhere, we could not but have some misgivings as to the possibility, or even the probability, of finding evidence of the havoc wrought by the sheepmen. It was an agreeable surprise, therefore, to find only the very slightest traces of the presence of sheep. The meadows are green and luxuriant, the exquisite mountain flowers are blooming in profusion, and whole forests of tiny new conifers are springing up in spots which for years have been bare. To those familiar with the mountains this new growth must speak volumes in favor of national control of the park.

SIERRA CLUB BULLETIN.

PUBLISHED IN JANUARY AND MAY OF EACH YEAR.

Published for Members.

Annual Dues, \$3.00.

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

OFFICERS FOR THE YEAR 1900-1901.

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SECRETARY'S REPORT.

FROM MAY 1, 1899, TO MAY 5, 1900.

The past year, from a financial standpoint, and respecting the Club membership, has been one of the most prosperous during the history of the Sierra Club. There have been one hundred and sixty-eight accessions to the membership, while the losses by death and resignations have amounted to but eleven. The Club is entirely out of debt, and has on hand a considerable balance with which to carry on its work.

The Yosemite quarters will this year be in charge of the experienced mountaineer and courteous ex-guardian of Yosemite Valley, Mr. Galen Clark, and it is expected that they will prove unusually attractive and of great service to visitors.

At the meeting of the Directors, held May 5, 1900, Mr. Robert M. Price presented his resignation as Secretary and as a Director of the Club. This was accepted, and Mr. William E. Colby was elected to fill the vacancy, both as Director and as Secretary.

FINANCIAL STATEMENT.

Cash on hand May 1, 1899	\$ 4 20
Collected for dues	1,564 50*
Received from sale of publications	55 26
Received on account of Yosemite quarters	9 50
Total	<u>\$1,633 46</u>
Deposited to account of Treasurer	<u>\$1,633 46</u>

Respectfully submitted,

ROBERT M. PRICE,
Secretary.

* This amount includes a portion of the dues for the year April, 1900, to April, 1901.

TREASURER'S REPORT.

FROM MAY 10, 1899, TO MAY 5, 1900.

RECEIPTS.

Cash on hand May 10, 1899	\$ 46 05
Total cash received from Secretary	1,633 46
	<u>\$1,679 51</u>

EXPENDITURES.

Publications	\$ 528 84
Printing of circulars, notices, etc.	75 90
Postage and stationery	194 87
Room rent (13 months)	65 00
Clerical work and typewriting	190 00
Binding	12 50
Registers and register boxes	38 95
Public meetings	21 20
Yosemite headquarters	70 90
Incidentals	48 91
Balance on hand	432 44
	<u>\$1,679 51</u>

(NOTE—In the above report a portion of the dues of the present year are included.)

Respectfully submitted,

J. N. LE CONTE,
Treasurer.

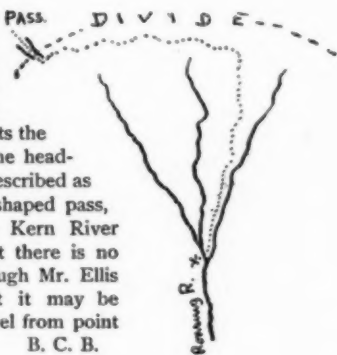
NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club.

The office of the Sierra Club is at Room 45, Merchants' Exchange Building, San Francisco, where all the maps, photographs, and other records of the Club are kept.

There are but a few copies on file of No. 3, Vol. I., of the BULLETIN. The Club would like to purchase additional copies of that number, and we hope any member having extra copies will send them to the Secretary.

Mr. Ellis, forest ranger, described to me last summer, and gave me permission to publish it, a pass he has discovered that will fill a long-felt want. It connects the Roaring River Basin with the headwaters of the Kern. It is described as an entirely practicable V-shaped pass, this trough being on the Kern River side of the divide. As yet there is no monumented trail to it, though Mr. Ellis intends to make one; but it may be reached in half a day's travel from point X on the map.



B. C. B.

BOLTON BASIN AND MT. RIXFORD.

There should have been explained, earlier than this, to the Sierra Club the use of the names "Bolton Basin" and "Mt. Rixford" in articles by President D. S. Jordan in the "Land of Sunshine" and "Sunset," and by myself in "Sunset," descriptive of the King's River Cañon. This explanation is rendered imperative now by reason of the appearance in this number of the BULLETIN of an account of Bolton Basin by Professor Brown.

As Professor Brown was leaving the cañon last summer he told

me about a "splendid lake basin" lying to the north of the Charlotte-Bullfrog Lakes basin which he and Mrs. Brown had partially explored. He urged our party (a group of Stanford men and women, including President Jordan and wife, Professor Cubberly and wife, Professors Richardson, Marx, Swain, Associate Librarian Babine, Mr. Irving Squire, of Toledo, Ohio, and the writer) to continue the exploration of the basin. During the course of the summer we made sketch-maps of the basin, indicating the position, shape, and size of the lakes in it, from various points on the high east-and-west ridge, running from the first peak in the Main Crest north of Kearsarge Pass to Mt. Gardner, and Messrs. Swain and Squire went into the basin over the ridge, traversed it, and left it by its northern end which drops into a wild, deep gorge of one of the confluent of the South Fork of the King's. These gentlemen carried a camera and got a half-dozen or more good views of various parts of the basin.

The basin lies between the west wall of the Main Crest (north of Kearsarge Pass) and the east wall of the north-and-south ridge, comprising Mt. Gardner, Split Mountain, and Mt. King. It is bounded on the south by the Kearsarge Pass - Mt. Gardner east-and-west divide, and on the north by the deep gorge of a branch of the South Fork of the King's River. It contains twenty-seven (or more) lakes, is traversed by a north-and-south-running low ridge, in the middle of which rises a splendid pinnacle, or crag, apparently inaccessible. The part of the basin lying west of this central ridge has a higher floor than the eastern half. The basin drains into the northern gorge.

This beautiful and interesting basin deserves a name, and we dubbed it "Bolton Basin," for honor of that true mountain-lover and indomitable mountain-climber, Professor Bolton C. Brown. The largest lake in the basin, lying just at the eastern base of the central crag, we call "Lake Lucy," for Lucy Fletcher Brown. The central crag we call "Pivot Crag."

The highest point in the Gardner-Kearsarge Divide is a peak just at the south end of the median ridge of Bolton Basin. It is the best view-point for seeing Bolton Basin spread out below, and it offers a magnificent view of the whole King's River region, bounded on the south by the King's-Kern Divide and on the north by the Mt. Goddard region. It is far enough out from the Main Crest to allow the reach of the crest for miles north and south to be seen, and near enough to lose none of the eloquent details of its sculpturing. It is approximately 13,300 feet high, and is worthy of a name. On climbing this peak I found records of but two previous ascents (not that the climbing is at all difficult; it is of the easiest), the first in time being that of Dr Emmet Rixford.

Dr. Rixford's name became especially familiar to us last summer through finding it at the top of almost every peak we got up. On Mt. Stanford, Brewer, University of California, and elsewhere, the records revealed the activity of this climber. At my suggestion we have called the hitherto unnamed peak in the Gardner-Kearsarge Divide "Mt. Rixford." A record of the naming (not a club cylinder) with a tolerably complete list (including two dozen peaks) of compass readings of the peaks of the panorama was left in a cairn. Lower Bullfrog Lake and No. 4 of the Kings-Kern Divide are due south, Mt. Gardner is due west, and Kearsarge Pass is a very little south of east. Mt. Rixford is easily climbed from Lower Bullfrog Lake. In ascending keep to the rocks; in descending take the slides of loose stuff. The coming down can be right speedy.

VERNON L. KELLOGG.

CUT-OFFS ALONG THE HOCKETT TRAIL.

The unsavory reputation of Harrison's Pass, and the unexpected grandeur of the mountain appetite which demands recoaling, and the desire to see the edge of the desert lead many tourists every season to go down through Lone Pine and Independence instead of attempting a direct passage between Bubbs' Creek and Mt. Whitney. The mapped trail by the tunnel forks is a long detour, which may be partly obviated by crossing directly from Mulkey Meadow to Whitney Creek; but there is a very easy trail that is still shorter. It is from Horseshoe Meadows, as the map names it, which is generally known in the vicinity as Round Valley, or Round Meadow. When you enter the meadow from the Lone Pine side, by either trail, several gaps in the mountains are in sight. One of the lowest, and the most traveled, is exactly west by the compass from the north edge of the meadow. There is no distinct trail at first. Strike out straight for the gap and you will come next to the farthest north of the little creeks which water the meadow. Keep on the north side of this creek and you will soon be in a well-worn trail, by which it is not three hours from this meadow to the main trail on the west side of Whitney Meadows. Getting at it from the other side, the pass may be located from the corral, whence it is 55° E. of N. The trail is at first on the south side of the creek which it ascends.

From Round Valley down to where it leaves the Little Cottonwood the old Hockett Trail is almost untraveled. The shorter route now in use leaves the valley at the lower end, drops over to the Big Cottonwood, descends this past an old sawmill, and crosses

to the Little Cottonwood, which it reaches about fifty yards below where it rejoins the old trail, at the foot of the Devil's Ladder.

Another trail in recent use is between Mineral King and the Big Kern, via Coyote (or Quinn's) Pass. I think they are the same. From the east it starts at the soda spring and keeps north of Coyote Creek up to the meadows. From the west it leaves the Hockett Trail, perhaps two miles south of Farewell Gap, and is indicated by a signboard—"Poison Meadow Trail." According to the signs, the "Hockett Trail" leads to Mineral King, and the trail to Hockett Meadows is the "Hocket Meadow Trail." E. B. C.

A NEW TRAIL TO THE GIANT FOREST.

It may be of interest to the members of the SIERRA CLUB to know that a new route has been opened to the Giant Forest in the Sequoia National Park, connecting Mineral King with the Colony Mills Road. The writer, with a party, was the first to travel over it during the month of July, 1899.

Having ascended Mt. Whitney, we passed down the Kern River, over Farewell Gap to Mineral King, and at the Soldiers' Camp, some four miles down the road, obtained our permit to enter the Park. Leaving Mineral King at 11:30 A.M., we followed the old trail to the north over Timber Gap, thence down Deer Cañon and across Cliff Creek to Redwood Meadows, arriving there at 3 P.M., and making camp for the night. Here is a fenced pasture containing very fine feed, but no water, except such as could be obtained from a shallow well dug in the edge of the meadow, south of the old barn.

Leaving the meadows at 8 A.M. the next day, we followed the trail across Granite Creek and the Middle Fork of the Kaweah, thence along a side-hill on the north of the latter stream, until we reached what is known as Bear Paw Meadow, almost on the divide between the Middle Fork of the Kaweah and Buck Cañon. To this point we had been following an old cattle-trail which proceeds farther along the ridge to Lone Pine Meadow, near the head of Middle Fork. It is from just above Bear Paw Meadow that the new trail has been made to the Merton Meadows that lie nearly at the top of the ridge, between the Middle Fork and Marble Fork of the Kaweah River. These Merton Meadows are also known as Alta Meadows and Farley Meadows.

Leaving Bear Paw Meadow the trail passes north over the ridge, then turning to the west proceeds down a narrow swale or glade for about three hundred yards, and then turns down-hill into Buck

Cañon. Crossing this cañon it starts immediately up the north side, and, after climbing the long hill, comes out on a rocky plateau close to the ridge and about half a mile east of the most easterly of the Merton Meadows. Here the trail turns to the west, crosses these meadows, thence along the side-hill to where it connects with the old trail to Giant Forest, heretofore used by the U. S. troops, and known as the Castle Rocks Trail, the point of junction being at the head of the "Seven-Mile Hill." Here you are in the park, and can follow the trail down the hill to the northwest into the watershed of the Marble Fork.

The connection between Bear Paw Meadow and Merton Meadows crossing Buck Cañon was made in July of this year by Mr. Ernest Britton, U. S. forest ranger, as a means of covering the territory under his supervision in a much better manner than was possible when the Castle Rock trail was the only means of entry into the country lying between Middle Fork and Marble Fork. At the time we went over it, little had been done except to indicate the route to be followed, yet no difficulty was experienced in riding the entire distance accompanied by loaded pack-animals. With a small amount of money spent upon the trail, it would open up a short, easy, and picturesque means of communication between Mineral King and the Giant Forest. Apparently the forest is but very seldom visited, as on none of the trails were there indications of any one having been in this year prior to our reaching there on July 24th.

The grass on all the meadows was very luxuriant, and the trout in the Marble Fork were abundant and of fine quality.

The time spent in traveling between Mineral King and the Giant Forest is as follows:—

	hrs.	min.
Mineral King to Redwood Meadows	3	30
Redwood Meadows to Bear Paw Meadows	2	10
Bear Paw Meadows to Buck Cañon Creek		45
Buck Cañon Creek to East Merton Meadows	2	50
East Merton Meadows to head of Seven-Mile Hill		45
Seven-Mile Hill to Round Meadow Camp in Giant Forest .	3	

Total number hours' travel 13

H. H. SINCLAIR.

ASCENT OF JUNCTION PEAK.

Sierra Club Cylinder No. 36 was deposited on the summit of Junction Peak, August 8, 1899, by Mr. E. N. Henderson and myself. The peak is at the union of the King's-Kern Divide with the main axis of the Sierra. A smaller ridge runs through it, sloping away to the south (where we climbed it) in the Kern Basin, and ending in the other direction in the nearest mountain southwest of University Peak. The ascent was made from camp at the foot of East Lake, starting at 7 A.M. Before 10 we had climbed Harrison's Pass, and were on the south summit of Mt. Stanford. Thence we worked southeast over the spur that runs to No. 1, and down through a magnificent lake-dotted granite amphitheater, which we called "The Coliseum." Near the lower end of this we scaled its east wall, and turned north up a sandy plateau which is connected with the peak by an easy knife-edge. The peak itself, like Stanford and Crag Ericsson, is a high and less comfortable knife-edge. It tends west of north, and is slightly highest at the north point. The altitude is said to be 14,150 feet; it seems hardly so high. The day was clear except for scattering clouds in the north; the two preceding days it had snowed. Returning we took the same course, only skirting the base of Stanford, and felt our way into camp at 10 o'clock. Beside our route, the peak is accessible from the southeast, and probably from the King's-Kern Divide. The view cannot be rivaled by that from any neighboring mountain, including as it does the basins of the King's and Kern, with the Inyo Valley, the picture of depth, on the other side.

The panorama is (compass readings):—

N. 18° E.	Mt. Bradley.
N. 50° E.	Mt. Keith.
N. 117° E.	Mt. Williamson.
N. 130° E.	Mt. Barnard.
N. 135° E.	Mt. Tyndall.
N. 142° E.	Mt. Whitney.
N. 190-210° E.	The Kaweah Group.
N. 225° E.	The Milestone.
N. 235° E.	Table Mountain.
N. 252° E.	No. 1.
N. 260° E.	Mt. Brewer.
N. 268° E.	Crag Ericsson.
N. 286° E.	Mt. Stanford.
N. 315° E.	Mt. Gardner.
N. 335° E.	Mt. Goddard.

University Peak is a little west of north, but was hidden in a cloud.

The panorama from University Peak is:—

N.	Mt. Kearsarge.
N. 45° E.	Independence.
N. 110° E.	Owen's Lake, Mt. Bradley.
N. 132° E.	Mt. Williamson.
N. 140° E.	Mt. Keith.
N. 145° E.	Mt. Tyndall.
N. 165° E.	Junction Peak.
N. 190° E.	Mt. Stanford.
N. 198° E.	The Milestone.
N. 204° E.	Table Mountain.
N. 225° E.	Mt. Brewer.
N. 266° E.	Mt. Hutchings (?).
N. 285° E.	Mt. Gardner.
N. 305° E.	Mt. Goddard, Mt. King.
N. 325° E.	Mt. Jordan.

EDWIN BINGHAM COPELAND.

CAMP COMMISSARIAT.

As an answer to the repeated questions asked by those planning trips to the mountains, as to provisions and cooking outfit, frequent reference has been made to the excellent suggestions on this subject in two articles in the *SIERRA CLUB BULLETIN*, one by Mr. Longley and the other by Mr. Solomons. (See *BULLETIN*, Vol. II, pp. 29, 111.) On various trips made into the remote regions of the High Sierra by the writer and a party of three or four, most of the articles of food suggested by Mr. Longley and Mr. Solomons have been used, but in addition, we have also taken a number of other articles which, owing to their compact form, nutritious qualities, palatableness, ease and quickness of preparation, or the fact that they require no preparation, we believe to be a decided success.

The following is a list of our provisions. The first ten articles mentioned possess either all or most of the advantageous qualities referred to, and we can particularly recommend them for hard trips. The list contains sufficient food for five men for twenty days, or one hundred rations.

	QUANTITY.	LBS.	COST.
Knorr's soup tablets	12 $\frac{1}{4}$ lb. pkg.	3	\$1 00
Knorr's erbswurst or marrow pea soup	3 I " "	3	60
Desiccated white potato	8	8	80
Evaporated sweet potato	5	5	1 00
"Julienne"	$\frac{1}{2}$	$\frac{1}{2}$	15
Grape nuts	3	3	45
Pinole	1	1	35
Shredded codfish	3 $\frac{1}{2}$ lb. tins	1 $\frac{1}{2}$	30
La Mont's improved crystallized egg	3 $1\frac{1}{2}$ " "	4 $\frac{1}{2}$	2 95
Horlick's malted milk	3	3	2 25
Armour's sliced bacon	17 I lb. tins	17	4 08
Armour's sliced ham	19 I " "	19	4 56
Libby's boneless pigs' feet	4 I " "	4	60
Libby's Vienna sausage	4 I " "	4	60
R. & R. boned turkey	4 I " "	4	1 80
R. & R. boned chicken	4 I " "	4	1 80
Yacht club sardines	5 $\frac{1}{2}$ " "	2 $\frac{1}{2}$	1 00
Libby's corned beef	7 I " "	7	84
Corned beef hash	1 2 " "	2	20
Beardsley's chipped beef	1 I " "	1	25
Franco-American game patés	3 $\frac{1}{2}$ " "	1 $\frac{1}{2}$	1 20
Standard army emergency ration	2 2 " "	4	50
Kapp & Street's chicken tamales	3 $\frac{1}{2}$ " "	1 $\frac{1}{2}$	30
Smoked Hamburg eels	3 I " "	3	75
Frame food stamina tablets	3 $\frac{1}{2}$ " "	1	75
Liebig's beef extract	5 4 oz. jars	1 $\frac{1}{4}$	3 50
Germea	3	3	18
Rolled oats	3	3	18
White flour	13	13	33
Whole wheat flour	7	7	18
Graham flour	10	10	30
Cornmeal	7 $\frac{1}{2}$	7 $\frac{1}{2}$	21
Pork and beans	3 $1\frac{3}{4}$ lb. tins	5	53
Corn	2 $1\frac{1}{2}$ " "	3	25
Tomatoes	2 $2\frac{1}{4}$ " "	4 $\frac{1}{2}$	25
Crown raisins	5	5	35
Dried peaches	5	5	1 00
Dried apricots	1	1	18
Dried apples	2	2	30
Prunes (San Jose)	4	4	60
Prunes (Italian)	2	2	30
Baker's cocoa	2 I lb. tins	2	1 00
Java-Mocha coffee	4 $\frac{1}{2}$	4 $\frac{1}{2}$	1 60
Hauswaldt's vigor chocolate	7	7	4 20
Cottolene	7	7	63
Rock candy drips	1 I gal tin	10	50
Eagle condensed milk	11 $1\frac{1}{4}$ lb. tins	14	1 60
Royal baking powder	2 $\frac{1}{2}$ " "	1	46
Whisky	7 pts.	7	4 00
Tea	$\frac{1}{2}$	$\frac{1}{2}$	35
Salt	7	7	15
Soda	1	1	10
Sugar (granulated)	18	18	1 17
Butter	4	4	1 00
Saccharine	100 $\frac{1}{4}$ -gr. tablets	50

The total weight of these one hundred rations is 267 pounds, or 2.67 pounds (42 oz.) per ration. This is about one third of a pound less than the ration of Mr. Solomons' list, the reduction in weight being largely due to the greater use of dried foods. It is about three ounces more than the United States Army Travel Ration. The cost is about fifty cents per ration.

Besides the articles mentioned in the above list, I would suggest *macaroni*, *spaghetti*, and *evaporated tomatoes*. They are light, easily carried, and can be made into a number of excellent dishes. *Wild onions*, which can be found in many places in the Sierra, also make an excellent addition to the meals.

Knorr's Soup Tablets—Afford a great variety in the way of soups. They are a very condensed form of food, each tablet, three inches square by half an inch thick, being sufficient for five plates of rich soup.

Knorr's Erbswurst, or *Marrow Pea Soup*—Put up in "cartridges" or cylinders ten inches long by two inches in diameter, is an excellent substitute for dried peas and beans, which are so difficult to cook in high altitudes.

Desiccated White Potato—Compact and light; cooks in five or six minutes; excellent for mashed potato and stews; a pleasant addition to many mixed dishes. We can recommend it very highly. It is much better than *evaporated* white potato, which is difficult to cook.

Evaporated Sweet Potato—Not quite so satisfactory as the white potato, as it must be soaked before cooking; is a valuable addition to the provisions.

"Julienne"—A mixture of various sorts of dried vegetables. The only objection to it is that it requires soaking and long cooking, but still is worth taking.

Grape Nuts—Can be served without any preparation; good for all meals.

Pinole—Needs no preparation; excellent for a hurried meal.

Shredded Codfish—Can be made into several palatable dishes.

Crystallized Egg—We can recommend this very highly; it is compact, light, good for omelets and scrambled eggs; cooked with codfish and flour, makes an excellent dish.

Malted Milk—A pleasant, nourishing drink; can be quickly prepared; keeps well in tins.

Army Emergency Ration—A mixture of meat meal, vegetable meal, curry, and other ingredients; can be eaten without preparation; good for soup or porridge; can be fried. There is with it a tablet of compressed sugared tea-leaves, sufficient for four quarts of strong tea. Put up in two-pound tins; is sufficient for one man for one day; is good for side trips away from the main source of supplies, where one is very limited as to weight.

Frame Food Stamina Tablets—A very concentrated form of food in the shape of small lozenges; conveniently carried in the pocket; extremely good for exhausting marches; can be procured from the "Frame Food Co.," London, England, at a shilling per box of about fifty lozenges.

Saccharine Tablets—Weigh practically nothing; a good substitute for sugar in cases of emergency. One tablet weighing only one fourth of a grain is sufficient to sweeten a cup of coffee.

Canned Ham and Bacon—We have been well pleased with our experiments in taking Armour's sliced ham and bacon. Much time is saved in the preparation of meals by having the ham and bacon already sliced. Besides, one is surer of having them the proper degree of saltiness than when purchased uncut. Although the tin weighs something, there is a saving in not having the bone or rind. The ham is sufficiently cooked to be eaten without further preparation in case of emergency.

Flour—We have tried the different kinds of flour, and find that the proportions given in the above list are satisfactory. The different kinds can be mixed in making bread.

Vigor Chocolate—Is more satisfactory than the other kinds.

Canned Vegetables—We fully agree with Mr. Solomons that canned vegetables are too bulky to be carried in large quantities; but we have found that it is possible to carry three or four tins, and that they add a pleasant variety to the meals.

Bills of Fare—It sometimes is a great annoyance when getting into camp to have to decide what to prepare for the next meal so that all will be satisfied with the quantity and the variety. After considerable experimenting, we reached results which seemed to suit our party. To give an idea of the meals we had on the march, I add the following bills of fare which are representative of the meals we had throughout our trips. As it may be of interest to compare our bills of fare with some given in the United States Army, I place a few taken from the "Manual for Camp Cooks" (a book prepared by the Commissary-General of Subsistence) by the side of ours.

BILLS OF FARE.

CAMP BILLS OF FARE.

Breakfast.

Germea.
Fried Ham.
Fried Sweet Potatoes.
Cold flap-jacks, butter.
Apple sauce.
Coffee.

ARMY BILLS OF FARE.

Breakfast.

Syrup, butter.
Hash.
White Bread.
Coffee.

Lunch.

Malted Milk.
Boned Chicken.
Flap-jacks and syrup.
Chocolate, Raisins.

Dinner.

Farina Soup.
Corned Beef Stew.
Mashed Potatoes.
Bread and Butter.
Cornmeal Pudding.
Cocoa.

Breakfast.

Rolled Oats.
Fried Bacon.
Scrambled Eggs.
Mashed Potatoes.
Coffee.

Lunch.

Beef Tea.
Vienna Sausage.
Flap-jacks, syrup, butter.
Tea.

Dinner.

Marrow Pea Soup.
Creamed Codfish with Egg.
Julienne.
Bread and Butter.
Stewed Peaches.
Cocoa.

Supper.

Stewed Apples.
Tea.
Bread.
Cheese.

Dinner.

Bean Soup.
Corned Beef Hash and Cabbage.
Mashed Potatoes.
Bread and Rice Pudding.

Breakfast.

Baked Hash, Onion Gravy.
Coffee.
Bread and Butter.

Supper.

Tea.
Bread and Syrup.
Cheese.

Dinner.

Vegetable Soup.
Baked Beans with Bacon.
Mashed Potato.
Bread.
Boiled Mush with Syrup.

Reflector Oven—I wish to add a word of approval of the suggestions made by Mr. Solomons concerning the reflector oven. We have met with much success in its use. It bakes bread and biscuits much better than the Dutch oven and is also excellent for roasting meats. If one is using saddle boxes it is well to have the oven made of such size that it will go into the boxes.

Frying-Pan Handle—Mr. Longley speaks of the advantages and comfort of having an extension handle for the frying-pan. We profited by what he wrote and used one, only instead of making ours of tin a foot long, we made it of wood the length of a broom-handle and twice the thickness. In one end was a hole or slit about six inches deep, large enough to hold the handle of the pan and this end was covered with tin to prevent its burning. To keep

the handle from slipping off when in use, a hole was drilled in the pan-handle and also in the wooden handle, through which a wire nail could be slipped. This handle weighs but little and is a great addition to the cooking outfit.

This article is written merely to give suggestions to those who may plan trips to the mountains. It contains a statement of things which we have used and found good. A number of articles of food, such as spices, might be added to the list of provisions. We omitted such things because no member of the party cared for them. Every party in preparing for the mountains must be governed to a certain extent by circumstances and by the tastes of its various members.

We believe that all the articles mentioned in the above list are suitable for trips which Mr. Solomons places in the second class, or trips into out-of-the-way districts, where for several weeks at a time it would be impossible to reach any source of supplies. We have used all of the articles on trips into some of the most remote and difficult regions of the Sierra. It may seem to some that our list contains too great a variety, and that some of the articles are unnecessary; but I think that Mr. Longley is correct when he says that the lists are not intended for the hardy mountaineer. They are intended for those who are accustomed to having variety in their meals, and we have found that it is not necessary to forego the benefits and pleasure of variety even in the most inaccessible regions. The benefits of variety far outweigh the disadvantages. We have returned from trips on which from morning till night, day after day, we have taken the hardest kind of physical exercise, in excellent condition and without having lost a pound in weight.

J. S. HUTCHINSON, JR.

NOTES FOR THE COMMISSARY.

When it is once decided that we shall go camping, and where, it is next to decide what we shall take. As to outfit and camp equipment, the files of the *BULLETIN* and other periodicals of the mountaineer and camper may be referred to with the certainty of finding a deal of good advice. As to what shall compose the store of provisions, as to the victuals of the camper, there is also no scanty measure of instruction and advice. But as to how much shall be bought of flour and bacon and coffee and the rest, I find less instruction.

From the experience of several summer outings in the Rocky Mountains of Colorado and in the Sierra Nevada, in each of which careful account was kept of the stores actually consumed, I have compiled the list which follows. The list includes only the staples,

the necessary and usual stores of the average camper, the college professor, lawyer, and doctor sort. The figures are based on the actual consumption of stores by parties of men who tramped and climbed and fished enough to have camp appetites, and who could yet go for a few days on close ration for the sake of light packs on a special climbing-trip. The amount of each staple given is in terms of person-weeks,—i. e. amount sufficient for one person one week. Modifications of these figures, caused by the obtaining of game, or by the addition of "luxuries," will be referred to later.

TABLE OF STAPLE PROVISIONS IN PERSON-WEEKS.

Wheat flour, 2.8 lbs.	Tomatoes, .33 can.
Graham flour, 1.1 lb.	Corn, .33 can.
Corn meal, 1.5 lb.	Dried fruit, .33 lb.
Sugar (white), 2.25 lbs.	Baking-powder, .13 lb.
Sugar (brown), .75 lb.	Salt, .5 lb.
Rolled Oats, .42 lb.	Butter (canned), .66 lb.
Breakfast Gem, .12 lb.	Cream (evaporated), 1 can.
Bacon, .66 lb.	Beans, .75 lb.
Ham, .9 lb.	Lard, .5 lb.
Corned beef, .36 lb.	Coffee, .33 lb.

To obtain total amount of any staple to be taken for a party of five expecting to be out five weeks, multiply the unit above given by 25; that is, multiply the person-week unit by total number of person-weeks.

On our mountain trips we have averaged about twenty trout per man per week. Their absence might necessitate a slight increase in amounts of meat.

If the camping-party is a hunting-party, and game is sure to be added to the bill of fare, the meats in above list may be reduced in quantity.

Of "luxuries," in addition to the above staples, every party will take a certain amount. We have had on various trips many different things, and on some of the trips a considerable quantity. But, as a matter of fact, I have noted that their presence or absence does not very materially alter the amount of staples used. And unless some luxury is actually substituted for a staple, the amounts of staples above given need not be much modified because of the addition of luxuries.

Among such luxuries we have found especially agreeable or convenient, chocolate (in pound cakes), beef extract (for the ailing member), little jars of club-house cheese, olives (a small keg can be carried easily), dates (especially good for coat-pocket lunches), little cans of jam, onions, canned fruits, maple syrup

(a small amount used to flavor the brown sugar syrup), nuts (like the dates good for mountain-top lunches), pilot-bread, tea, cocoa, rice, etc.

Of course, several of the necessary things are not included in the above list of staples. Such are pepper and yeast. The amounts to be taken are too small to make a showing in person-week units. No account is made in the list of potatoes. They are too heavy and bulky (too much water) to carry far. Where they can be obtained within reasonable distances of the camp, well and good; but for high mountain camps, where all the provisions have to be packed in on mules, better discard potatoes. Some have found "desiccated" potatoes good.

The beans should be cooked and dried before leaving home. Boil the beans at home without any salt in the water; when cooked spread them out and dry, and pack away in cloth bags. When in camp cook as usual with salt. These pre-cooked frijoles will not necessitate making permanent camp for a week in order to cook beans.

Graham-flour bread can be made more easily than wheat-flour bread if the baking is of the Dutch oven sort.

The amount of sugar may seem excessive to some. Sugar and sleep are the best removers of muscle-fatigue. If you don't like sugar, cut it.

The brown sugar is used for making syrup for pancakes. The sugar called "Hawaiian Golden" makes excellent syrup.

It is advantageous to use quickly cooking breakfast foods, such as "Breakfast Gem," flaked oats, flaked rice, etc., instead of the usual rolled oats, which require too long cooking.

The canned butter included in the staples may, of course, be classed with the luxuries. It is easily carried, keeps perfectly, and tastes well.

Finally, it is unnecessary to say that tastes differ, and with them the habits of campers relative to the selection of camp stores. These notes do not pretend to suggest the necessity of any particular stores. They simply give bits of actual camp experience. The advantage to the camper for the first time buying camp supplies of being able to know exactly "how much of what" other campers have found necessary and sufficient has seemed to the writer to warrant publishing the list. It was only last summer that the writer met a well-known mountaineer in the heart of the Sierra Nevada able and anxious to dispose of pounds and gallons of stores. He was lamentably overstocked. At the same time our party was watching the white sugar coming out even to the table-spoonful. We had bought by the table.

VERNON L. KELLOGG.

THE FRYING-PAN AS AN OVEN.

It may not be known to some readers of the Notes who look forward to pack-mule trips this summer, that a most satisfactory oven for baking bread can be improvised out of an ordinary frying-pan. The advantage of being able to do this is obvious. Few burden their packs with reflectors, none, probably, with Dutch ovens, while the frying-pan is never omitted. Now, this convenient and universal implement has one fault, especially in cooking food made of flour or meal: it compels the use of great quantities of grease. And the less grease the better, it is needless to say. Ovens require but little of this article. Take with you two common tin plates of such size that either will fit, bottom downward, into your frying-pan. The rim of the plate must engage the rim of the pan, so that there will be an air-space, the more generous the better, between the floors of the two vessels. Let these two become warmed, and then put your dough into the moderately greased plate and cover it with the second tin plate. You have now an almost perfect oven, the essential part of which is an air-chamber between the fire and the baking food. Your biscuits are almost as they are at home, and your stomach thinks you must have left that greasy frying-pan behind. The process is not slow, especially if your pans are hot in the beginning. The bread is easily turned by turning over the two plates.

Let me add, by way of postscript, that while your bacon provides plenty of grease, olive oil, carried in a can, is far better and more wholesome, especially in frying beans, that best friend of the trampler.

TRACY RANDALL KELLEY.

FORESTRY NOTES.

EDITED BY PROFESSOR WILLIAM R. DUDLEY.

THE CALAVERAS
BIG TREES.

The sale of the Calaveras "Big Trees," and the unusual efforts of the people of California to interest Congress in their redemption have attracted greater attention than any previous discussion connected specifically with the forests of the Sierra or of California. There are many other "Big Trees" (*Sequoia gigantea*, Lindl.) scattered from Placer County to the borders of Kern; but these were the ones best known to the hearts of men. Indeed, there are no other groves of trees in America that at all compare with them in this respect. During the fifty years they have been known to white men, they have not only been the object of pilgrimage by many a man of science of this and other lands, but hundreds of travelers, eminent and otherwise, have seen them. It was a sense of affection felt for them by this latter class, and based on a feeling of old acquaintance, that probably furnished the motive power for most of the extraordinary movement in favor of their preservation.

There are two distinct groves concerned in this question which has so interested us. The first is the "Mammoth Tree Grove," or "Home Grove," at the Big Trees Hotel and post-office, a small grove covering about fifty acres and containing, according to Whitney, of the California Geological Survey, ninety trees (and Mr. Sperry's recent statements agree with Whitney's). It is in Calaveras County, at an elevation of 4,700 feet. Five miles from the Home Grove, across the Stanislaus, in Tuolumne County, at an elevation of about 4,900 feet is the "South Park Grove," or the second of the so-called "Calaveras Big Tree" groves. It contains about 1,380 trees scattered over 1,000 acres, and in this grove *Sequoia* reaches as grand proportions as anywhere in the Sierra. Both these groves are some miles outside the boundary of the Sierra Forest Reservation. The first named is really the famous Calaveras Grove—the one about which many scientific data were gathered thirty years ago—data of increasing value as time goes on. This is the one whose trees were first seen by white men—

probably by General Bidwell* in 1841, certainly by Doud in 1852. Specimens from this grove were sent to our American botanists, Asa Gray and John Torrey, to be named, but the specimens were lost; those sent to England reached John Lindley, and he had the honor of giving the specific name *gigantea*, which has been so long accepted by the world, if not by the botanists. Seeds from this grove were scattered through the gardens of Europe, and a vigorous generation of young trees is bringing back to that continent the traditions and memory of *Sequoia*, which perished from it with the Tertiary. This is almost the only grove visited by Asa Gray, Sir Joseph Hooker, and the scientific travelers of the earlier days; and Gray's classic address, when President of the American Association for the Advancement of Science, in 1872, upon "Sequoia and Its History," was in part written beneath its shade. Most of the rush of modern railroad travel, it is true, now passes through the Mariposa grove, but it thinks little and writes less about that grove. A few men of science know of thirty other groves of *Sequoia gigantea*, but few, except the lumbermen, believe this to be a fact; therefore it still remains true that all the history and the literature of *Sequoia*, and a good deal of the sci-

*John Bidwell, proprietor of Rancho Chico, a pioneer in fruit growing, enterprising in the better movements to develop the resources of California, and in 1892 the nominee of the Prohibition party for President of the United States, "was probably the first white man who saw one of these trees. In 1841 Bidwell crossed the Sierra Nevada from the East; descending the Stanislaus River, he became separated from his party while hunting, and in the evening of October 20th, when it was too dark to see distinctly, he came upon an enormous fallen tree, which many years after he recognized in the tree of the Calaveras Grove known as 'The Father of the Forest.' He found a hiding-place for the night, not however remembering the standing trees, being disturbed, as he supposes, by the dread of Indians, signs of whom he had seen during the day."—[See Sargent (*N. A. Silva* 10: 147), who received this account from Mrs. Bidwell in a letter.]

It is fitting to the dignity of the species, that the noblest of all trees should first be seen by a young man who afterward became one of the wisest and best citizens of a great State. The Sierra Club invited General Bidwell to address the public meeting in March, called to support the Calaveras Grove movement, but he was unable to attend. The following note, written on that occasion, is pregnant with the best advice. Since then he has passed away from a long life, useful to his State and Nation.

"CHICO, CAL., Mar. 6, 1900.

ROBERT M. PRICK, Secy. Sierra Club, S. F., Cal.:

Dear Sir:—Of course, the Calaveras Big Tree Groves must be saved at all hazards. They are among the greatest wonders of the world, and the most accessible of all the Big Tree Groves, which should all be preserved. And further, the present havoc going on by the lumbermen and shakemen threatens at no distant day the entire destruction of the Sierra Nevada forests, so necessary to the preservation of the springs and living streams, which are of untold value, and add much of life and beauty to the mountains. All further sale of timber lands should at once cease, and all use of timber should be under the most wise and economic regulations possible to be devised by the Government.

Save the Big Trees. Save all trees as far as possible.

Yours with highest respect,

JOHN BIDWELL."

tific interest concerning the species, center around this grove. It is imperative, therefore, that Californians should redouble their efforts at the present time and support their delegation in Congress in its efforts to lift the matter out of its discouraging plight, and push the bill for condemnation proceedings.

Mr. James L. Sperry had owned these groves for nearly fifty years, and had given them reasonable care. He had endeavored to sell them to the United States, had urged Congressmen and others in authority to favor this plan, but without avail. On December 28, 1899, he bonded his entire forest — 2,320 acres, including the "Home" and "South Groves," to R. P. Whiteside, a capitalist or speculator of Duluth, Minn. Whiteside had purchased not less than 8,000 acres of timber-land in that vicinity. The bond continued till April 1st, when the Sperry tract was to pass absolutely to Mr. Whiteside for the consideration of \$100,000, if the latter's examination of the timber, through his "cruisers," proved satisfactory.

On January 5th this deal became known to the late P. A. Buell, of Stockton, President of the San Joaquin Valley Commercial Association. On January 6th he laid the matter before that association, in a meeting at Hanford, which adopted a "resolution to memorialize Congress to preserve the Calaveras Big Tree grove." Thereupon President Buell appointed a committee to secure the necessary facts for future action. He also appealed at once to the Sierra Club and the California Waters and Forest Association for co-operation in order to save the trees. On January 12th, the first account of the transaction between the owner and purchaser appeared in the San Francisco papers. On the night of January 22d, before an audience that filled the Metropolitan Temple, President Jordan, of Stanford University, made an impassioned appeal for the preservation of the forests of California. He announced the proposed sale of the Calaveras Grove, described it as the noblest forest in the world, and declared it to be "more the duty of the nation to preserve its forests than to foster commerce." Petitions from various parties or institutions were forwarded to Congress. Still it remained for the California Club to organize public sentiment in the State in favor of Government interference, and to make that sentiment irresistibly felt in Congress. An immense labor though it was, the women of this club appear to have been the only influence which thoroughly aroused the public and gained the attention of the people, not only of this State, but of the nation, as well as that of Congress. They bent their energies to the task of getting petitions in California and to personal interviews with the Congressional and Executive officers at Washington. The California papers have given a great deal

of space to the question and materially assisted the friends of the movement.

Congressional action finally took the form of the following resolution, introduced by Congressman De Vries:—

"Resolved by the Senate and House of Representatives of the United States of America in Congress assembled: That the Secretary of the Interior be and hereby is authorized and directed at the earliest practicable date, to open negotiations for, and if possible procure a bond upon, the lands occupied by the said groves of trees," (i. e. the "Mammoth tree grove" and the "South Park grove" mentioned in the preamble,) "with sufficient adjacent lands for their preservation, management and control, and submit the same to Congress for action thereupon."

The bill, introduced February 12th, was reported back from the Committee on Public Lands on February 21st, passed by the House on March 3d, and by the Senate on March 7th,—in both cases without a dissenting vote,—and on March 8th the President signed it. The rapidity of this action shows not only the great interest of the Congressional delegation from California, but the active sympathy of many other members and of President McKinley.

Mr. Whiteside came into full possession of these trees on April 1st, and has declined to sell to the United States except for about ten times his purchase price. This ought to be a lesson to Columbia, who has been practically giving away her forests by the million acres to her ungrateful children. The United States would only be exercising common prudence if it withdrew at once every acre of its forest-land from sale and entry.

The latest official utterance on this question is in a letter from the Secretary of the Interior to Congress, submitting the correspondence with Mr. Whiteside. He says, "If it is desired to obtain the title to these lands and to perpetuate the mammoth trees, it will have to be done through the means of the exercise of the power of eminent domain." It would be only proper, at this stage of the proceedings, to exercise this power over the entire 8,000 Whiteside acres, and thus expedite that capitalist's return to Duluth, if such a thing is possible.

FOREST The writer spent about six weeks in the summer of
FIRES. 1899 traveling through the forests of Humboldt, Del Norte, Siskiyou, and Shasta counties. A great fire was working its way through the Upper McCloud River Valley, and minor ones were seen in other regions. In certain regions of the Siskiyou Mountains fires of previous years had destroyed from one half to nine tenths of the timber. Such devastation (the greatest except the lumberman's) of the primeval forest deter-

mined me to make further inquiries by letter. Fifty or more were sent to reputable correspondents in all the mountain counties of the State. The uniformly candid replies showed that above 850,000 acres of forest land in California, north of the Tehachapi, were burned over in 1899. The largest was in the Upper McCloud Valley. It burned nearly all summer, and extended over about 250,000 acres, occasioning a loss of \$500,000. The next largest was in the Tuolumne County forests. One hundred thousand acres of redwood land in Mendocino were also burned over. Severe forest fires also occurred in Western Siskiyou County and in Plumas County. The Mt. Tamalpais fire was a comparatively small one,—2,000 acres,—although it attracted great attention in San Francisco. A severer and more destructive one occurred near Wrights Station, destroying houses, barns, and orchards. All of these fires occurred outside the forest reserves.

In the latter is now a very efficient force of "rangers," such as were specified in the last BULLETIN. The California forest reserves north of the Tehachapi cover about 5,000,000 acres, and it is most gratifying to learn that in that whole area, the official reports show less than 2,000 acres burned over in 1899. Contrast this with the 850,000 acres (which would mount up to 1,000,000 acres on the basis of complete figures).

In the recent report of the U. S. Geological Survey (Vol. V) on the forest reserves, a map of the forested area of Western Washington shows that out of 14,000,000 acres of natural forest above 2,600,000 acres are worthless, from destructive forest fires. It is useless to multiply arguments or facts on this subject to readers of the BULLETIN, but it is the duty of every one to urge the early and rapid development of a United States Forestry Bureau, that all our forests may be at least as well protected as they are now in the forest reserves.

The writer would be glad of communications on the subject of forest fires for the season of 1900.

THE YALE SCHOOL OF FORESTRY.

"At a meeting of the Yale Corporation, held at New Haven, Conn., March 16, 1900, President Hadley formally announced the gift of \$150,000 to Yale University from Mr. and Mrs. James W. Pinchot, of New York, and their sons, Gifford Pinchot and Amos R. Eno Pinchot, both graduates of Yale, for the foundation of a school of forestry as a department of the University. Upon the acceptance of the gift, Henry S. Graves, Yale, '92 (now of the Division of Forestry), was appointed professor of forestry. The regular work of the forest school will begin with the opening of the University in the fall."—*The Forester, for April, 1900.*

We also learn that U. S. Hydrographer F. H. Newell and Mr. Gifford Pinchot will be special lecturers, and that the house of the late Professor O. C. Marsh, on Prospect Street, will be used for the forest school. Mr. J. W. Pinchot has also given the use of a considerable tract of forest land near Milford, Pike County, Pa., for the practical summer work of the school.

All of this is a fine inspiration for those who are laboring without compensation to establish forestry in America on a permanent basis. Mr. Gifford Pinchot has not only given his life to this work, but a generous portion of his fortune.

THE A preliminary meeting of representatives from the peninsular counties was held at Stanford University on May 1st, to consider the establishment of a public forest park in the Santa Cruz Mountains, in that region known as the "Big Basin." Maps, statistics, and plans of operation were laid before the meeting, and a committee of ways and means was appointed, consisting of ex-Lieutenant Governor Jeter, Santa Cruz; Rev. Dr. Kenna, Santa Clara College; John E. Richards, Esq., San José; Professor Senger, of the University of California; and W. R. Dudley, of Stanford University.

FORESTRY WORK FOR 1900.

A recent letter from the United States Forester promises the presence in California during the coming summer of at least four of the principal members of the Division of Forestry staff. The Forester and Chief of Division, Mr. Pinchot, will come to Arizona in May, accompanied by the Chief of the Division of Botany, and will be in California in July. One assistant will continue in charge of the investigations in the northern redwoods; another will assist the United States Geological Survey in their forestry investigations in the Sierra, while a third will investigate an important question — the influence of the forest on the run-off in San Bernardino County. Mr. Lippincott, of the Hydrographic Bureau, will continue his work on the measurement of the stream-flow in California; Dr. Elwood Mead, with the assistance of several well-known engineers, will begin very soon the investigation of irrigation problems in some of California's most fertile valleys; while the Geological Survey continues its invaluable topographic work. All this work is done at the expense of the United States Government, and the particular favor shown this State is due to the active interest of its citizens in the problems of forestry and irrigation.

THE DUTY OF THIS STATE.

When will this State, the wealthiest on the Pacific Coast, do more than this, and vote money to assist the National Government in its impor-

tant work in developing the State's natural resources? The following letter from Charles D. Walcott, Director of the United States Geological Survey, to Mr. J. B. Lippincott, recently published in the *Los Angeles Times*, shows that this State has not done what other States much less benefited by the great topographic survey have done: "In California there has been in the past an apparent lack of appreciation of the systematic work which has been carried on, this being in marked contrast to the active interest displayed in similar investigations in other localities." In several instances in the East, the State had co-operated with the General Government in defraying the cost of survey and thus greatly expediting the work; for instance, the total cost of surveying Massachusetts was \$107,845, of which the State appropriated \$40,000. The total cost of New York State was \$216,000, of which the State bore \$86,000. Now, the geodetic survey must be completed before we can have the data for locating and building Government reservoirs.

"NORTH AMERICAN
FORESTS AND
FORESTRY." This is probably the first book of its kind to be published in America. It is written by Ernest Bruncken, Secretary of the Wisconsin Forestry Commission, and is published by G. P. Putnam's Sons in a very creditable manner. If we were disposed to be critical, we should find fault with its English and some of its statements in geography and the field of science. But these are trivial defects when contrasted with the good it will certainly do in educating the people in forestry. In a popular way, it not only gives facts on forest industries, but is sound in its statement of the relation of man and communities to the forest, in its discussion of fires, the profits of the forests under a good forestry system, and the methods of lumbering in North America. We can commend it to those wishing information on these subjects.

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